# FEEDSTUFFS

★ A WEEKLY NEWSPAPER ★

FOR THE FEED MANUFACTURER, JOBBER, BROKER and DEALER

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## Ralston Purina Co. Dedicates Danforth Farm Youth Center

By GEORGE GATES
Editor of Feedstuffs

GRAY SUMMIT, MO.—Confidence in the future accomplishments of today's farm youngsters and in the contributions of animal agriculture to the nation's well-being provided the theme for dedication ceremonies held at the Danforth Farm Youth Center here May 13.

The center, built on a choice high-ground site within the Ralston Purina Co.'s 778-acre research farm, provides facilities for conducting research work along the lines of farm youth club programs.

The dedication ceremonies were distinguished by the presence of Ezra Taft Benson, secretary of agriculture, who delivered a full-scale address on the challenges that changes in U.S. agriculture present to farmers and industry.

Mr. Benson, who was accompanied on the visit by Mrs. Benson, paid sincere tribute to the memory of the late William H. Danforth, founder of the Ralston Purina Co., after whom the center is named.

"Being here today brings back many fond memories of the debt I personally owe this noble, generous and inspiring American—of the immense service he contributed to our youth, especially farm youth—of the heritage of challenge he has left for all of us," Mr. Benson said.

Mr. Benson related that he had on many occasions visited Mr. Danforth.

A life-sized bronze statue of a farm

(Turn to PURINA, page 149)

## Allied Mills Sets Tonnage Record

CHICAGO—Allied Mills, Inc., Chicago, announces a record first-quarter tonnage for the three-month period ending March 31. In the quarter, earnings totaled $849,991.91, or $1.07 a share, against $686,923.86, or 87¢ a share, for the same period in 1957.

During the nine months ending March 31, earnings amounted to $1,870,634.71, or $2.36 per share, against earnings in a comparable period the previous year of $1,515,225.31, or $1.91 per share.

In making the announcement, Elmer W. Lenz, president of the feed manufacturing firm, said that the outlook for the current fiscal year of the company is enhanced by the fact that tonnage during April of 1958 amounted to a record volume for any month in the firm's history.

"We are very pleased," said Mr. Lenz, "that Allied Mills shares with other members of the industry the accomplishment of fine records for the last several months. Our entire organization of employees and dealers deserves commendation for doing a truly great job.

"On the eve of the celebration of the 50th anniversary of the American Feed Manufacturers Assn. it is appropriate that we recognize that sales

(Turn to ALLIED MILLS, page 153)

## *Dehydrated Alfalfa Production Under Way*

KANSAS CITY — Production of dehydrated alfalfa is well under way over a wide area, according to reports received by the American Dehydrators Assn.

Kansas operations are in full swing, even as far west as Larned. An earlier start would have been possible except for rain.

Nebraska dehydrators are in operation this week, but are not expected to reach full production until near the end of next week.

Ohio plants are in operation in the Toledo area and plants further south have been in operation for over a week.

Northern Minnesota plants are not expected to be in production for another three weeks.

Cool, cloudy weather over the past few weeks in eastern Kansas, at least, seems to have made the carotene not quite up to normal on protein grades, it is reported. Trade reports indicated production was being held mostly to six days a week.

## Livestock Prices at Feed Business-Boosting Levels To Continue for Some Time

WASHINGTON—Needless to say, there's no recession in the livestock industry these days. And it looks as though cattle and hog prices will continue at favorable levels, helping to stimulate feed business, for some time.

Hog prices are expected to be profitable to most producers at least well into 1959. Prices and incomes for cattle are expected to be sustained well for the next several years while herds are rebuilt.

Marked price declines for hogs are possible by late 1959, and there is some danger of an excessive cattle price spiral. Otherwise the outlook is generally good.

Another factor, of course, is the economic recession. Livestock prices have been high largely because of short supplies, and if the recession were to be prolonged, it could eventually have more effect on livestock as supplies expand in response to good prices.

Prices of meat animals in early spring were generally the highest since the peaks of several years ago. The strength, said the U.S. Department of Agriculture this week, was largely due to a combination of (1) delayed marketings for slaughter following big feed crops and (2) withholding of breeding stock for herd expansion. Livestock slaughter in January-April averaged 9% below 1957, and demand for meat held up well despite some decline in consumer income.

The delay in marketings is temporary and is ending soon. By mid-summer hog slaughter will be appreciably above last year. Fed cattle marketings will increase further and will probably exceed a year earlier in the second half of the year.

These upturns, USDA said in its

(Turn to LIVESTOCK, page 8)

**EDITORIAL**

## *The Golden Year Is Here*

THE TIME has rolled around once again for the year's biggest gathering of the feed fraternity—the American Feed Manufacturers Assn. convention at Chicago's Hotel Morrison May 21-23. This year's convention holds very special significance for the feed industry. It is the 50th to be held by the AFMA, and it is appropriately designated as a focal point for calling nationwide attention to the vigor of the feed industry and its tremendous role in development of American agriculture.

BROAD INTEREST in the convention reflects in a direct way the importance of the industry and its national association. Registrations are expected to reach between 1,900 and 2,000, according to estimates made late this week by association officials. Attendance at this level would not be as large as last year's registration, when the Feed Industry Show was held

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## FEEDSTUFFS *Features This Week*

**GOLDEN OPPORTUNITIES:** From a foundation built on 50 years of progress, the feed industry can look ahead to golden opportunities as well as challenges. See AFMA chairman Oscar Straube's discussion, page 18.

**GOLDEN YEAR:** AFMA staffer Dick Kathe tells on page 70 how the industry can team up in the "Golden Year" to build good will with customers.

**FEED PRODUCTION:** Estimates of feed production and consumption, by states, in 1956-57 will be found on page 10.

**COMPUTERS:** The use of electronic computers in feed formulation is explained on page 28.

**PELLETING:** Animal scientists see complete pelleted rations as the new look in feeding ruminants—pages 36 and 94.

**MILL EXPANSION:** Planning, equipment needs, investment and capacities as a feed mill is expanded by stages are detailed on page 48.

**ENZYMES:** Some implications of research on enzyme supplements for feeds are outlined on page 58.

**ADVERTISING:** Concepts of feed advertising in an era of agricultural change are explained on page 126.

**NEW PLANT:** A new feed mill is described on page 112.


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## *Pelleted Ruminant Rations Seen as Major Opportunity*

By ROGER BERGLUND
Feedstuffs Managing Editor

"A large tonnage of pelleted complete rations is going to be fed to cattle and sheep. Someone is going to provide the ration."

Those are the words of a University of Illinois scientist in an article elsewhere in this issue of Feedstuffs.

The $64 million question is: Who will that "someone" be?

To a large extent, it appears, it can be the feed industry. At least some persons feel that the industry can and will move into this field in a big way, providing complete pelleted rations (including both roughage and concentrate) for feedlot cattle and sheep.

If so, this could represent the biggest area for new commercial feed tonnage that the industry has.

At any rate, there is tremendously increased interest in the pelleting of roughage and/or complete rations for ruminants. This, as is generally known, is already being done in some feedlots and by some feed firms on the West Coast in particular, but it still has not spread very far. Also, the practice is still confined largely to feedlot operators, with few commercial feed mills yet in the picture.

Most of the interest so far has come from larger feeders and feedlot operators, but feed firms are showing more interest now.

One industry man observed that "there has been a lot of thinking and

(Turn to PELLETS, page 153)

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EDITORIAL STAFF—George L. Gates, Editor; Roger Berglund, Managing Editor; John Cipperly, Washington Correspondent; Emmet J. Hoffman, Merchandising Editor; John S. Franklin, James E. Sharon and James H. Ross, Editorial Assistants; Duane F. McKenzie, Research Director.

WASHINGTON CORRESPONDENT—John Cipperly, 004 Hibbs Building, Washington, D. C., Telephone, Republic 7-8534.

ADVERTISING STAFF—Wilfred E. Lingren, Advertising Director; Carl R. Vetter, Advertising Department Manager; Bruce A. Kirkpatrick, Advertising Production Manager; Leland C. Hubert, Assistant Advertising Production Manager; R. Dale Swenson, Promotion Manager.

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## The Golden Year Is Here

(Continued from page 1)

in conjunction with the convention. However, the total is expected to surpass the mark set in 1956.

A great deal of solid work has been put into the 50th anniversary observance by AFMA committees and staff members, as will be readily apparent to convention-goers when the curtain is raised on opening day.

Convention plans have been reported in detail in previous issues of Feedstuffs, but some of this year's highlights deserve special emphasis again.

THE CONVENTION banquet, for example, the first such affair at an AFMA gathering in 10 years, will be the high point in the organization's Golden Jubilee observance. A "Golden Book" dramatization, in the estimation of those involved in its planning, truly will put the spotlight on progress in the feed industry and agriculture.

"I feel sorry for people who don't attend the banquet," Ed Glennon, president of AFMA, said this week. "The event will be exceptional."

A "Street of Golden Memories and Golden Opportunities," which will display 191 pictures of old and new industry and industry-associated scenes, will be open during the entire convention. It will offer an opportunity for both reminiscing about the old days and speculation about the days ahead.

"FROM FEED TO FOOD," the Thursday afternoon program, will bring into sharp focus the dramatic progress that has been made in production of meat, milk and eggs through nutritional research. Seven demonstrations will be presented by teams of authorities from college research centers and industry, and results of record-making experiments will be released during the event. This indeed sounds like drama and suspense of the first order.

A "meet the press" panel on Friday morning will attack the industry's liveliest current topic, contract agriculture.

There will be more, of course. The numerous special committee sessions, plus the informal hallway and hotel room conferences certainly will add to plus the informal hallway and hotel room conferences, certainly will add to of the convention next Friday will certainly have a better understanding of their industry and their personal role in it.

See you in Chicago!

## Center of the Nugget

THE GOLDEN CONVENTION, which will epitomize the feed story and the activity of the American Feed Manufacturers Assn. in producing the show, could, because of its size and glamor overshadow the through-the-year service of the AFMA.

Just to offset any such possibility, a few words of well-deserved recognition are in order.

The importance of a nationally-organized association to serve as a spokesman for interest of all feed men is undisputed. How it goes about doing that job, and the many others it must perform in developing unified action on common problems within a highly competitive industry, is a measure of the success of such an organization. By this test, the AFMA measures up outstandingly well. Industry and agriculture this week could not be wishing the organization "happy birthday" if it were not so.

The AFMA has had the leadership of top industry men, the devotion of a competent staff and, possibly most important, the hard work of committee members possessing vast talent and knowledge. Its committee efforts have produced sound thought and policy direction, and its top officers have provided the guidance necessary to produce results.

NOT ALL the problems have been licked or all the battles won, but there is no doubt that efforts of such groups within AFMA as the nutrition council, the feed survey committee, the purchasing agents committee and the feed control relations committee (to mention just a few) have produced results of a broadly progressive nature. High hopes are held for success of the new market research division, establishment of which certainly indicates a further keeping-up-with-the-times attitude among association leaders.

These comments are intended to suggest that loyal members and affiliates of the AFMA continue to do their utmost to keep the AFMA progressive in the next 50 years as it has been in the past 50. And it intends too, to say: Many happy returns.

## Only the Beginning

THIS IS ONLY the beginning. Just as the feed industry recognizes that it is only part way up the ladder of progress, the planners of the AFMA's anniversary observance recognize that the celebration now is the starting gun for a full Golden Year of opportunities to call attention to the merits of scientific feeding.

This issue of Feedstuffs, similarly, is only the beginning of an effort to cover a broad range of industry accomplishments in serving agriculture better each succeeding year.

News and feature reports this week cover what appear to be some No. 1 industry topics—such things as pelleting, use of computers, integration, enzymes and others. (See index on page 1.)

The look-forward character of the feed industry, which is the theme reflected in special presentations, is given added emphasis in articles by Oscar Straube (page 18), AFMA board chairman and eminent industry philosopher, and by AFMA's able public relations director, Dick Kathe (page 70).

BOTH OF THESE articles offer challenges for progressive-minded feed men and underline the opportunities for making the next 12 months extremely valuable in more firmly establishing the industry's stature in the agricultural community.

During the next 12 months, to add impetus to these opportunities, Feedstuffs' readers will be presented a Golden Year series of articles planned to keep the progress theme in focus. Starting with a report on industry research in June, the series will continue with coverage of today's methods of procurement, formulation, sales and service, nutrition for each class of livestock and poultry, and feed production.

It is the sincere hope of the editors of Feedstuffs that at the conclusion of the series a comprehensive story of where the industry is and where it is going will have been documented. Only by seeking out what holds most promise for the years ahead can the Golden Year ideal be perpetuated.

**A FEEDSTUFFS FEATURE**

## FORMULA FEEDS: HOW'S BUSINESS?

**Demand for formula feeds continued at a good, steady pace over most of the U.S. during the past week, although returning pastures and softer prices were said to be cutting into demand in some areas. Hog feeds continued to pace the Midwest, while poultry and turkey feeds showed some increases. Jobbers reported a quiet ingredients market because of well stocked mixer inventories and limited purchasing. Pasture conditions were reported by the U.S. Department of Agriculture to be most favorable for the country as a whole since 1921. The index of feedstuff price dropped to 83.9, compared with 86.3 the previous week and 78.2 a year earlier. The feed grain index at 69.9 was unchanged from a week earlier and below the 75.7 of a year ago. (Ingredient price details on pages 150-152.)**

### Northwest

Formula feed sales continued at a strong pace through the past week, although some feed mill representatives reported a slightly smaller backlog at weekend than for the previous week.

Sales of hog feeds continued to lead and cattle feed sales were also good. Turkey and chick starter business was rated from "not so good" to "wonderful."

Spring field work on farms and the softer ingredients market were mentioned as possible factors in the slower demand reported by some manufacturers. Because of weaker millfeed and soybean meal prices, the prices of feeds generally were due to be down $1 to $2 during the coming week. Some firms were still running with extended shifts to meet the demand which has continued through the spring.

Mixers were reported to have built up fairly good inventories which allowed them to stay on the sidelines as the ingredient prices went down.

### Southwest

Good, but not rushing, business described the sales pace of the formula feed industry. Most mills were on a full five-day, two-shift schedule and backlogs ranged from one to three days. Several mills reported noticing a slight slowing trend late in the week. This was attributed to the easier ingredient markets, dealers holding off their purchases until the market bottoms out or they have to replenish stocks. It was generally agreed that hand-to-mouth buying was the rule throughout the marketing end of the business.

Turkey feeds were figuring stronger in the sales picture. Poults were being put down in increasing numbers now and those turkeys that were put down a month ago were developing bigger appetites. A steady increase in this business was expected.

Chick starter and growing rations were also moving in good volume. And egg mash was moving well. Pig starter and hog rations were still good items although the spotlight seemed to be on poultry feeds. Dairy and beef feeds were moving very slowly. Inquiries on creep feed have been made, however, and there were prospects that this interest will be orders in the not too distant future.

The over-all outlook for feed business in the area remained good, with farmers said to be optimistic, and livestock numbers larger than a year ago.

Price lists for next week were expected to be down 50¢ to $2 ton. Corn was much stronger than a week ago, but millfeed and protein prices were down. The maximum declines were expected on some high protein rations.

### Northeast

Cool weather, with frost in some areas, propped dairy feed demand somewhat in a generally steady formula feed market. Egg mashes, especially super laying mashes, were going well and chick and turkey starter feeds were also well.

(Turn to MARKETS, page 154)

Seldom mentioned - always present

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**WE HAVE A SPECIAL GIFT AND SOME SURPRISES FOR YOU**

**A. E. STALEY OFFICERS ELECTED—These three men were elected to top posts of the A. E. Staley Manufacturing Co., Decatur, Ill., at the company's recent annual meeting. On the left is Donald E. Nordlund, who was elected a vice president, a director of the company and a member of the executive committee. In center is A. E. Staley, Jr., now chairman of the board and chief executive officer of the company after having been president since 1932, and on the right is the new president, E. K. Scheiter, who had been executive vice president since 1946.**

## New Officers Elected To Head A. E. Staley; Dividends Declared

DECATUR, ILL.—A. E. Staley, Jr., was elected chairman of the board and chief executive officer of the A. E. Staley Manufacturing Co. at the company's recent annual meeting.

Elected president was E. K. Scheiter, who had been executive vice president of the company since 1946.

Donald E. Nordlund, who has headed the company's legal division since 1956, was elected a vice president, a director of the company and a member of the executive committee.

All other officers and directors of the corn and soybean processing concern were reelected, except T. C. Burwell, who retired as traffic vice president last year.

Mr. Staley has been with the company 33 years, and had been president since 1932.

Mr. Scheiter started with Staley's in 1919, and became general sales manager in 1924. He was made vice president, assistant general manager, a director and a member of the executive committee the following year. He served as acting president of the company in 1942 when Mr. Staley was called to Washington to organize a corn products section for the War Production Board, and again in 1948 when Mr. Staley was named ECA administrator to Norway.

With Mr. Scheiter's elevation to the presidency, Mr. Nordlund will assume some additional administrative duties, Mr. Staley said.

Mr. Nordlund graduated from Midland College at Fremont, Neb., in 1943, and from the University of Michigan Law School in 1948. Before joining Staley's he was associated with the Chicago law firm of Stevenson, Conaghan, Velde and Hackbert for seven years.

The Staley board declared a regular quarterly dividend of 25¢ per share on common stock. Payments will be made June 5 to stockholders of record May 23, it was announced. The usual dividend of 94¢ also was voted on the $3.75 preference stock. It will be paid June 20 to stockholders of record June 6.


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## GOOD PASTURE, FORAGE PROSPECTS NOTED

**WASHINGTON — It looks as though there will generally be plenty of pasture, range and forage this year. Pasture feed condition on May 1 was the most favorable for the country as a whole since 1921, according to the U.S. Department of Agriculture. The condition was reported at 89% of normal, 6 points above April 1 and 4 points above May 1 last year. The high condition reflected a favorable moisture situation over most of the country and rapid growth after a delay earlier because of cool weather. The hay crop condition averages above last year and the highest since 1922, and hay stocks already on farms on May 1 were 30% above the previous record for the date. However, stocks were small in some areas. USDA said: "1958 looks like another stockman's year." Western ranges promised the best early grazing since 1942.**

## Paul Q. Card, Flavor Authority, Dies at 56

DEERFIELD, ILL.—Paul Q. Card, 56, widely known authority in the feed flavor field, died unexpectedly May 7 at his home in Deerfield.

Prior to 1937, Mr. Card was active in specialty feed ingredients, gained through his experience in a teaching and research career of 12 years. He also spent six years with Archer-Daniels-Midland Co. in Philadelphia and Minneapolis. He had his own business until becoming associated with Flavor Corp. of America at Chicago in 1949, later serving as vice president and technical director of that organization until 1954.

In April of 1955, Mr. Card formed Taste Engineering, Inc., of Chicago, serving as its president until he left the company on Feb. 28 of this year.

He was a member of Deerfield Lodge No. 1110 A.F. & A.M., the Lions Club of Deerfield and the Chicago Feed Club. Interment was at Woodbury, N.J.

Survivors are his wife; a daughter, Nancy, and a son, Paul, Jr. All of the home.

## Oilseed Meal Futures Show Mixed Trend

MEMPHIS—Prices were mixed in oilseed meal futures May 14 on the Memphis Board of Trade, compared with May 7.

Nearby May suffered the greatest losses, resulting from indifferent demand for cash oil meal. This reflected slow mixed feed business, brought about by improved weather and ample pastures.

Unrestricted soybean oil meal closed May 14 80¢ lower to 50¢ a ton higher, Eastern Trunk Line soybean oil meal 25¢ to $1 lower, bulk cottonseed oil meal unchanged to 50¢ higher, and sacked old process oil meal $1 to $2 lower.

## Farmers Elevator Co. Plans to Construct 6 New Iowa Feed Mills

FORT DODGE, IOWA—The Farmers Elevator Service Co., manufacturer of Felco Feeds, has announced plans to erect six feed manufacturing plants in various parts of Iowa. The announcement was made recently by Purl Van Hemert, chairman of the cooperative's board of directors, and M. M. Stientjes, general manager.

A plant will be constructed in Mason City as the first part of the multi-million dollar expansion program, it was announced. The other five plant locations will be announced later.

The Farmers Elevator Service Co. handles seed, fertilizer, chemicals and other farm supplies as well as feed. More than 130,000 Iowa farmers control the company through local cooperatives.

A million-dollar home office and feed mill were constructed by the company in 1955 in Fort Dodge, but the mill is inadequate to handle the fast-growing demand, the announcement said.

## Colonial Poultry Farms Purchases West-Line

PLEASANT HILL, MO.—M. R. Irwin, president of Colonial Poultry Farms, Inc., with headquarters offices in Pleasant Hill, and Don W. Olson, general manager of West-Line Breeders Assn. of Kent, Wash., announce the purchase by Colonial Poultry Farms of all basic parent lines used in the production of West-Line layers.

With this purchase of basic lines is included the servicing of 90 hatcheries now under franchise in the West-Line program.

This total, added to the 74 hatcheries in the Colonial True-Line program, pushes the total being serviced by the Colonial True-Line franchise organization to 164 hatcheries.

These hatcheries are located from coast to coast throughout the U.S., in Canada, Europe and Latin America.

Dr. David Carson, University of Utah, consulting geneticist for the West-Line Breeders, will assist Colonial's staff in making the transfer of parent lines and pedigree records.

Mr. Olson stated that the problem of shipping breeding stock across the country was a major consideration in the decision to sell to the Missouri firm. "We believe that the new arrangement will be advantageous to West-Line growers and associate hatcheries," said Mr. Olson. "Colonial Farms is in a position to take up where we leave off in the promotion of West-Line chicks and in the research end."

## Wilfred Witz to Take Part in Demonstration

CHICAGO—Wilfred Witz, Archer-Daniels-Midland Co. nutritionist, Minneapolis, has been named to one of the livestock and poultry demonstration teams which will take part in a "From Food to Feed" presentation May 22 at the American Feed Manufacturers Assn. convention in Chicago.

Mr. Witz is replacing Dr. Burr Ross, Gooch Feed Mills, Salina, Kansas, who previously had been scheduled to be on the beef and sheep team. Mr. Witz will work with Dr. W. M. Beeson, Purdue University, in the demonstration.


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Every member of our organization extends congratulations to those who are currently commemorating the industry's 50th year. Our sincere thanks, too, for the confidence you have placed in Small's Dehydrated Alfalfa—a confidence that we shall continue to make every effort to merit.

FOR FEEDS WITH A FUTURE

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# AFMA Lists Honored Guests

CHICAGO—The list of guests to be honored at the "golden banquet" of the American Feed Manufacturers Assn. at the group's 50th anniversary convention in Chicago May 21-23 has been announced.

The guests were chosen on the basis of their distinguished service and recognized leadership in science, education, communication and federation, as related to progress of the feed industry, agriculture and AFMA, according to association officials.

The banquet will be held May 22, 7 p.m., in the Terrace Casino of the Morrison Hotel in Chicago.

**LEADERSHIP OF AFMA**

**Harold A. Abbott**, charter member and four times a president of AFMA, starting in 1918.

**Dale W. McMillen**, president of AFMA, 1929-1930, and founder, Central Soya Co.

**Clarence A. Coddington**, president of AFMA, 1932-1934, and one of the founders, Beacon Milling Co., 1920.

**Harold McGeorge**, president of AFMA, 1934-1936, and founder of Royal Staff-O-Life Mills.

**Arthur Hopkins**, chairman, AFMA board of directors, 1944-1946, and president, Chas. M. Cox Co., 1944-1952.

**Lloyd S. Riford**, chairman of AFMA board, 1946-1948, and one of the founders, Beacon Milling Co.

**Fred W. Thomas**, chairman, AFMA board, 1948-1950, and president, Central Soya Co., 1948-1954.

**Thomas W. Staley**, chairman, AFMA board, 1950-1952, directing Staley Milling Co., since 1925.

**J. D. Sykes**, chairman, AFMA board, 1952-1954, vice president, Ralston Purina Co.

**D. Kingman Webster, Jr.**, chairman, AFMA board, 1954-1956, executive of H. K. Webster Co. since 1925.

**Oscar Straube**, chairman, AFMA board, 1956-1958, active in feed industry since 1918.

**John C. Reid**, chairman of the first executive committee and charter member of AFMA.

**Fred N. Rowe**, attended organization meeting of AFMA, and actively connected with feed industry since 1903.

**Ralph Field**, AFMA's full-time executive from 1933-1946 (executive secretary and president).

**Walter C. Berger**, AFMA's executive president, 1946-1952, and active in feed industry since 1925.

**W. E. Glennon**, AFMA executive president since 1952, and former assistant to the president and secretary-treasurer.

**INDUSTRIAL AND AGRICULTURAL LEADERS**

**Dr. O. C. Aderhold**, executive committee, National Association of Land Grant Colleges and State Universities and president, University of Georgia.

**Leslie E. Bopst**, secretary of Association of American Feed Control Officials since 1927, and state chemist of Maryland.

**Ray B. Bowden**, recently retired after many years as executive vice president, Grain & Feed Dealers National Assn.

**William F. Brooks**, president, National Grain Trade Council.

**Dr. L. C. Cunningham**, agricultural economist for AFMA feed survey committee since its organization, 1943.

**Lisle R. Hawley**, member NRA Code Committee, 1933, vice chairman, AFMA board, and associated with Quaker Oats Co. many years.

**W. H. Kircher**, president, American Agricultural Editors Assn., editor, The Farmer, St. Paul, Minn.

**Robert C. Liebenow**, president, Chicago Board of Trade, oldest and largest contract grain exchange.

**Joe McClelland**, president, American Association of Agricultural College Editors, University of Arizona.

**James A. McConnell**, member NRA Code Committee, 1933, associated with Cooperative G.L.F. for many years, assistant secretary of agriculture, 1954-1955.

**Robert Miller**, president, National Association of Television and Radio Farm Directors, farm director, Station WLW, Cincinnati.

**Searle Mowat**, member NRA Code Committee, 1933, started with Larrowe Milling Co., 1913, and president for many years.

**Al Oliver**, executive vice president, Grain & Feed Dealers National Assn.

**Charles B. Shuman**, president, American Farm Bureau Federation, largest farm federation.

**Floyd Wilson**, attended first annual convention of AFMA, president of National Alfalfa Dehydrating & Milling Co. until his retirement.

**LEADERS OF SCIENCE AND EDUCATION**

(The following have been selected for having served 50 years or more in land grant colleges, teaching, research and extension work.)

**Prof. J. G. Halpin**, a lifetime of service to poultry research, University of Wisconsin.

**Dr. George H. Hart**, school of veterinary medicine, University of California, applying veterinary knowledge to animal nutrition.

**Prof. Harry L. Kempster**, professor emeritus of poultry husbandry, University of Missouri.

**Dean H. H. Kildee**, dean emeritus of agriculture, Iowa State College.

**O. E. Reed**, chief of bureau of dairy industry, U.S. Department of Agriculture, until his retirement.

# U.S. Laying Flock Down 3%

WASHINGTON—The nation's laying flock during April averaged 3% lower than a year earlier, and April egg production was 3% smaller than in 1957. In fact, production was the smallest for the month since 1941.

The average number of layers during April was about 295 million. Rate of production per layer was 18.6 eggs, compared with 18.7 a year ago.

As of May 1, the U.S. Department of Agriculture reported, the number of layers on farms totaled 290 million —down 3% from the total of about 298 million on May 1 last year. Numbers were below a year ago in all regions except the south Atlantic and western states.

**Hens and Pullets of Laying Age on Farms, May 1**

(000's omitted)

| Year— | North Atlantic | E. North Central | W. North Central | South Atlantic | South Central | Western | United States |
|---|---|---|---|---|---|---|---|
| 1947-56 (average) | 49,112 | 61,712 | 89,543 | 30,753 | 52,444 | 32,906 | 316,470 |
| 1957 | 50,513 | 56,948 | 82,018 | 30,745 | 43,385 | 34,556 | 298,185 |
| 1958 | 49,700 | 55,694 | 77,343 | 30,685 | 40,756 | 35,626 | 290,804 |

"The management certainly has gone out of its way to make us feel at home."

## *Superior Feed Mills Celebrates Its 50th Anniversary*

OKLAHOMA CITY—Superior Feed Mills, Oklahoma City, this year is celebrating its 50th anniversary. To mark the occasion, B. D. Eddie, president of the company, this week sent golden ash trays as gifts to customers and other friends of the milling firm.

The Superior firm was founded in Oklahoma City in 1908 by Mr. Eddie's father under the name of the Eddie Feed Store. The anniversary date of the founding is May 11.

The celebration of the golden anniversary year of the milling company corresponds with the beginning of a similar golden year being observed by the American Feed Manufacturers Assn. at its annual meeting May 21-23 in Chicago.

**AFMA Director**

Mr. Eddie recently was reelected to a second three-year term as a director of AFMA. He is a past president of the Midwest Feed Manufacturers Assn. and the Oklahoma Feed Manufacturers Assn., and is a former chairman of the Feed Tech Advisory Committee, which represents the feed industry in the promotion of the Kansas State College feed technology courses.

Superior Feed Mills has had a steady growth over the years. Moving from the original location of the business, a new mill was put into operation at the Oklahoma City stock-

(Turn to SUPERIOR, page 154)

## Small Division Closes Dehydrating Unit

MINNEAPOLIS—The Neodesha, Kansas, alfalfa dehydrating plant of the W. J. Small Division of Archer-Daniels-Midland Co. will not operate this season, according to Richard G. Brierley, vice president.

The plant closing follows shutting down of six W. J. Small plants last season. None of these will resume operations this year, Mr. Brierley said.

In early April National Alfalfa Dehydrating & Milling Co. announced that it would not operate four of its plants this season. Two of these are located in Oklahoma and two in Colorado.

According to trade reports, most dehydrators are holding production to six days a week at the outset of the current season. Seven day operations have been customary in most areas in previous seasons.

The shorter running schedule, industry leaders have said, is expected to result in greater production efficiency, improved quality of meal and production more in line with demand. Alfalfa meal price levels have been depressed for several months.

## Central Association To Meet June 2-3

MILWAUKEE—Talks on integration, merchandising, nutrition, government relations and methods of setting up farm credit will be given at the 33rd annual convention of the Central Retail Feed Assn. June 2-3 at the Hotel Schroeder, Milwaukee.

All of the first day and the morning of the second day will be devoted to discussions. The annual banquet and floor show are scheduled for the evening of June 2, the salesmen's "eye-opener" breakfast with floor show at 8 a.m. June 3 and the Blatz stag luncheon at noon on June 3.

Ray H. Kaercher, Watertown, Wis., association president, will open the convention with his annual report. Other reports will be given by Louis Lader, Jr., Avalon, Wis., treasurer, and Eldon H. Roesler, Milwaukee, executive secretary. Final speaker at the first morning session will be Madison Clement, Waco, Texas, president of the Grain & Feed Dealers Nation Assn.

Three speakers will comprise the afternoon program June 2, opening with Raymond J. Pollock, director of the grain division, U.S. Department of Agriculture, Washington, D.C. His talk is titled "The New Look."

Following Mr. Pollock, Andrew Lampen, president of the Federal Intermediate Credit Bank, St. Paul, and his assistant, A. K. Johnson, will tell "How Farm Credit Can Save Your Business."

He is expected to discuss how local farm credit needed in the age of farm integration can help feed dealers meet the threat of outside competition.

Concluding speaker the afternoon of June 2 is Gov. Vernon W. Thomson, Wisconsin.

There will be three talks the morning of June 3. Dr. H. R. Bird, chairman, poultry department, University of Wisconsin, will discuss "Keep Up to Date on Poultry Feeds." The head of the department of animal husbandry at the University of Wisconsin, Dr. Robert H. Grummer, will talk on the "Future in Swine Feeding in Wisconsin" and will analyze the impact of integration.

Concluding speaker is L. L. Cunningham, president of the Business Institute, Milwaukee, and a merchandising expert. His subject is the "Base of the Selling Triangle."

Others on the board in addition to the officers are David K. Steenbergh, Fond du Lac, honorary chairman; Erwin Seno, Slades Corners; Harvey Thoma, Sugar Bush; Douglas J. Mangan, Cadott; Jacob Hunter, Antigo, who is also vice president; Armon N. Fischer, Fond du Lac; E. H. Sather, New Richmond, and Ray F. Andersen, Galesville.

# End-Product Price Reduction Is Basis Of Integration Growth, Feed Men Told

By JAMES ROSS
Feedstuffs Staff

MINNEAPOLIS—Integrated farming is here, and will continue to expand as long as it reduces costs and the prices consumers pay for finished products.

This was stated by Dean McNeal, executive vice president of Pillsbury Mills, Inc., Minneapolis, in a talk before members of the Northwest Feed Manufacturers Assn. this week at the Calhoun Beach Hotel in Minneapolis.

More than 130 feed men were present for the talk and open discussion of integration and contract farming —the largest regular meeting attendance of the season for this local group.

Defining integration as "any combination of two or more operations between production and consumption," Mr. McNeal said its development stems from the need for maximum efficiency to meet increasing competition.

He pointed out that integration tends to provide greater production efficiency and a higher quality product, and "if it provides a real function, will survive."

The economist made it clear that much of what he had to say did not necessarily represent his own or his company's views, but reflected opinions gathered from people he has talked with throughout the country.

He listed four factors which integration contributes: (1) More readily accessible capital, (2) better balanced management, (3) a solution to certain marketing and processing problems, and (4) elimination of unnecessary expenses.

### Benefits to Producers

Producers stand to benefit from integration because it reduces risk and provides outside management assistance, according to Mr. McNeal. He said he believes there is another advantage—technical advances which would not be made so rapidly without integration. He said he also thinks it provides better utilization of labor because the non-producer management will look for means of greater mechanization.

As disadvantages of integration to producers, Mr. McNeal said that there may be a greater tendency toward a monopoly-type situation, and that it sets up a basis for more drastic over- or under-production because it impairs the supply-and-demand governor which controls production when producers operate independently.

He mentioned the probable shrinking importance of open, public markets as a major problem in maintaining established market prices.

There is also the factor of less independent decision-making.

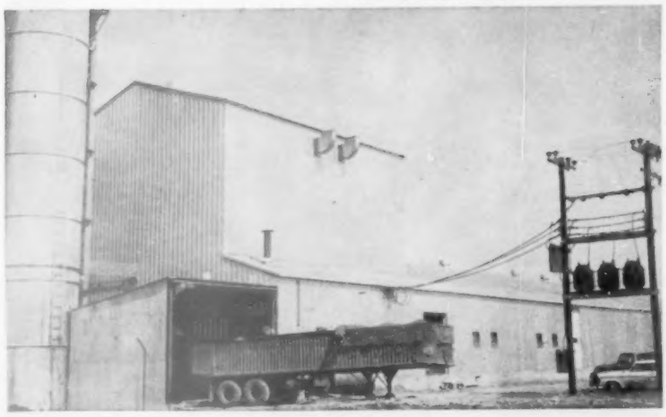
As another possible disadvantage to producers, the economist said there is a possibility of more government regulation.

He mentioned that integration tends to move production closer to centers of consumption.

From the standpoint of the processor and supplier, he said advantages are a more uniform product and a more stable supply of product, making it possible to outline business plans further into the future, and an increased use of management skill, thus speeding up technological advances. Larger capital investments and a greater cost at the point of production were mentioned as disadvantages to the processor and supplier.

Regarding the whole of society, Mr. McNeal said integration is beneficial in that it generally provides, as

(Turn to INTEGRATION, page 154)



**NEW KENT MILL—This photo shows part of the mill and warehouse area of Kent Feeds' new plant in Sioux City, Iowa. One of the ingredient storage tanks may be seen on the left. A truck load of bulk ingredients is being received.**

# Kent Feeds Opens New Plant In Sioux City, Iowa

SIOUX CITY, IOWA—Kent Feeds has opened its new "Feed-Matic" plant in Sioux City.

Officials of the company, which has its headquarters in Muscatine, Iowa, said the completion of the new mill will allow expansion into new territories in western Iowa, Nebraska, South Dakota and Minnesota.

The plant—a push-button, batch-mixing operation—has a capacity of 60,000 tons a year.

The new mill is of all-steel construction. Ingredients received by truck and rail are elevated into one of 13 bulk storage tanks. The tanks have a total capacity of 800 tons.

Ingredients are proportioned by the push-button method, being augered into the central scale. After dry ingredients are batched, molasses, fish solubles, animal fats and other liquids are added in a special liquid mixing unit. The batch mixer is equipped for instant drop of the feed into a surge bin, from which the

(Turn to KENT, page 154)

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What Do You Need?
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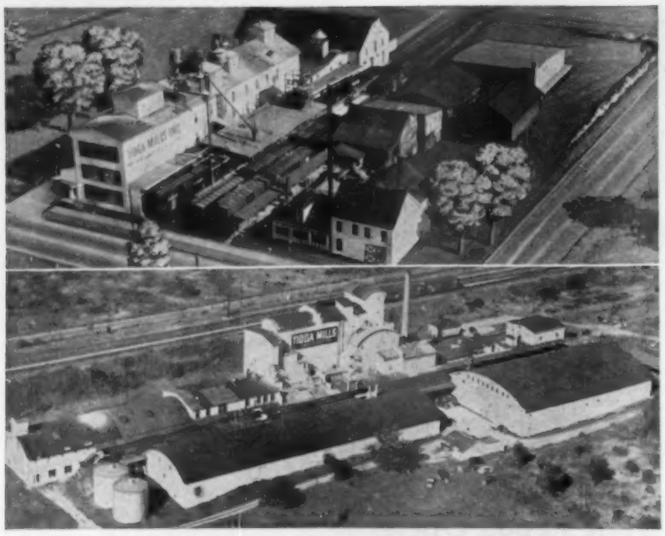


**FIFTIETH ANNIVERSARY—Tioga Mills, Inc., Waverly, N.Y., this summer will complete 50 years as a feed manufacturer. It is one of the oldest feed manufacturers in the U.S. Besides its plant at Waverly, shown in the bottom picture, the firm in 1941 established another plant (top photo) at Sunberry, Pa. During its 50 years of operation, company officials said, the feed firm has taken part in establishing the use of molasses in high grade feeds; treating seed oats for smut on a commercial basis; adopting dairy feeds to various types of roughage; producing dairy feeds that sustain increase in the butterfat content of milk; discovering a high protein concentrate chick starter and laying mash, and promoting the use of iodine in feeds. The firm now has storage capacity for 10,000 tons of sacked feed, 150,000 bu. of bulk grain and 240,000 gal. of molasses. Maximum output of actual shipments is 20 cars daily. Management is comprised of N. P. Dounce, president and general manager; C. F. Howard, vice president and purchasing agent; C. B. Dounce, Jr., treasurer and also general manager of the Sunberry plant; D. A. Armstrong, secretary and sales manager; J. T. Slater, plant engineer, and Dr. W. F. O'Rourke, director of nutrition. The company serves New York, New Jersey, Pennsylvania, Maryland, Delaware, Virginia, West Virginia and New England.**

## LIVESTOCK

(Continued from page 1)

latest report on the livestock situation, will bring some reductions in prices, but the drop will not be great, chiefly because continued withholding of breeding stock for inventory expansion will prevent large changes in supply.

Here's how USDA sees the situation and outlook for hogs, cattle and sheep:

**HOGS:** Prices for hogs may remain fairly steady until mid-summer, when they normally are highest, and then decline. Their total fall reduction will not be unusually large, as the expected increase of 5 to 6% in the 1958 spring pig crop is being largely confined to the December-February farrowing season. By late fall, hog prices will probably not be far below the lowest price received last fall.

The 1958 fall pig crop may increase about 7 to 10%, with farrowings less than the currently high hog-corn ratio would ordinarily indicate. At an increase of around 7 to 10%, slaughter in the late winter, spring and early summer of 1959 would be considerably larger than in the same season of 1958. Prices would be materially lower, but probably still above a normal relationship with corn and therefore profitable to most producers. The price outlook is relatively favorable because supplies of pork per person would not be unusually large. The pork supply could increase somewhat without becoming burdensome.

There is more danger of a severe price decline for hogs farrowed in the spring of 1959 than for those of this fall.

While prospects for returns from 1958 fall pigs are fairly good, it may be the last time in several years when this will be true, USDA feels. Eventually, the favorable price relationships will lead to a marked expansion in production, and this could happen in 1959.

**CATTLE:** With more breeding stock being withheld, the inventory of cattle on farms might increase slightly on Jan. 1, 1959, as compared with a year earlier. If this occurs, it will end the cyclical decline in numbers after two years—the shortest period of decline on record.

Prices of fed steers are expected to decline moderately until summer and then level out, probably near those of last summer. The number of cattle on feed April 1 was up 12% from a year earlier, but in view of strong cyclical factors which are slowing down the over-all rates of cattle marketing, prospective declines for fed cattle during 1958 now appear likely to be smaller than previously indicated.

If withholding of cattle should develop too fast, it could create a cattle price spiral, as each advance would stimulate further withholding to speed expansion. Although it seems likely that marketings of fed cattle will dampen any growing boom, past experience indicates that the danger is not absent and merits attention.

At any rate, prices for cattle should be sustained well for several years. Unless an artificial boom psychology gets out of bounds, fast increases will be prevented by both short-term and longer term forces.

A seasonal drop in prices of feeder cattle is likely as fed steers trend down. Feeder cattle are selling at so narrow a price margin with fed steers that any decline in steers will bring a response in feeders.

**LAMBS:** Prices of lambs, unlike other meat animals, declined following a mid-winter high. Prices may recover from the April low, then decline seasonally, and the rest of the year earlier.

## FISH MEAL OUTPUT OFF SHARPLY

**WASHINGTON — Fish meal and scrap production during the first two months of 1958 totaled nearly 4,000 tons—less than half that reported during the same period last year—the Fish & Wildlife Service reports. The marine-animal oil yielded during the 1958 period totaled almost 95,000 gal., a decline of 48% from a year ago.**

## 1958 Broiler Prices Continue Higher Than Last Year's Levels

SALISBURY, MD. — An increased demand for broilers was reflected in last week's Delmarva prices—21.77¢ lb. as compared to 19.26¢ a year ago.

For the first four months this year broiler prices were 12%, 7%, 9% and 5% respectively over prices for the same months a year ago.

With prices good, the U.S. egg set continues to rise. In 22 reporting states, hatcherymen last week set 49,715,000 eggs. This was 1% more than the previous week and 26% above the corresponding week a year ago. Increases in the number of eggs set from the previous week were reported in all but eight states.

Broiler growers last week placed 34,433,000 chicks. This was also an increase over last year. It was 3% over the week before and 19% above the corresponding week a year ago. All but four of the 22 states reported higher placements compared to the previous week. Largest increases were in Maryland, Texas and Maine.

(Meanwhile, a later USDA daily market report indicated the Delmarva market was weak, with offerings heavy and demand reduced. On May 14, prices were reported at around 19-20½¢ lb. in the area. In Arkansas, there was a difference of opinion as to actual market conditions; prices were 19-20¢. In Georgia, demand was slow to fair, with prices mostly 19¢. Slow to fair demand for ample to fully ample supplies was reported elsewhere, too.)

## Cuban Molasses Output Shows 11% Reduction

WASHINGTON — Blackstrap molasses production from the 1958 Cuban sugar crop amounted to 176.3 million gallons as of April 15, according to a U.S. Department of Agriculture report.

This compares with 199.5 million gallons by the same date a year earlier, according to the Cuban Sugar Stabilization Institute. The yield of blackstrap per short ton of raw sugar up to April 15 was 34.2 gal. compared with 39.6 gal. up to April 15 a year earlier.

Cuban sugar production averaged about 81% completed by April 15, about the same as a year earlier.

## Kenneth Mecklem Heads Grain Superintendents

MINNEAPOLIS — Kenneth Mecklem, Cargill Incorporated, Portland, Ore., was elected president of the Grain Elevator and Processing Superintendents during the annual convention of the organization here this week. He succeeds Ernest O. Ohman, Osborne McMillen Elevator Co., Minneapolis.

Dunkin A. Welte, Central Soya Co., Fort Wayne, Ind., was advanced to first vice president, and George Spafford, Standard Milling Co., Kansas City, Kansas, assumed the post of second vice president. Dean M. Clark, Grain magazine, Chicago, remains secretary-treasurer.

Five GEAPS members were elected directors, including Robert Jordan, Public Grain Elevator, New Orleans, reelected to a 3-year term. New men elected for a 3-year period include: James Crombie, Rice-Powell Elevator Co., Chicago; Emil Anderson, Norris Grain Co., Omaha, and Thomas Irman, Anderson Elevator Co., Maumee, Ohio. Henry J. Anderson, Bunge Corp., Minneapolis, was elected for a 1-year term to replace Mr. Spafford.

Directors whose terms expire in 1960 are: Clifford R. Lindeman, Saskatchewan Wheat Pool, Port Arthur, Ont.; Herman Kroloff, Advance Seed & Grain Co., Phoenix, Ariz.; Carl E. Kinman, Farm Bureau Co-op Assn., Inc., Columbus, Ohio, and Tom L. Scott, Pearlstone Mill & Elevator Co., Dallas.

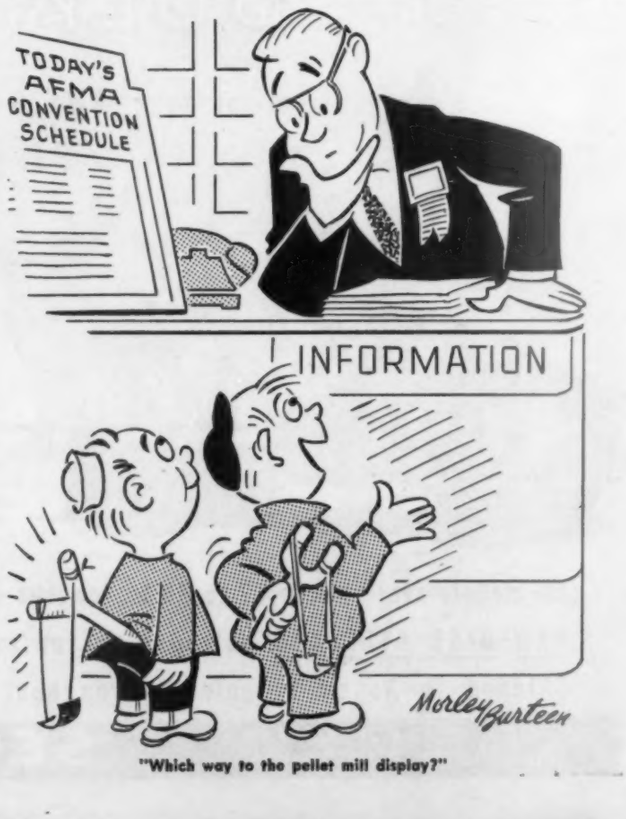
Directors whose terms expire in 1959 are, in addition to Mr. Anderson: John J. Kitching, G.L.F. Exchange, Inc., Buffalo; Wilfred P. Sutton, Tidewater Grain Co., Philadelphia, and Harvey T. Goodenough, Quaker Oats Co., Cedar Rapids, Iowa.

Harold R. Beaver, Stratton-Theis Grain Co., St. Joseph, Mo., was returned to the office of sergeant-at-arms.

Discussions of various phases of grain handling made up the principal part of the program of the event.

### BUILDS FEED MILL

DARDANELLE, ARK.—The H. M. Orsburn & Son Co. has completed a new feed mill on the Arkansas River near here. The firm will manufacture broiler and layer feeds, and may expand to other types of feeds later.

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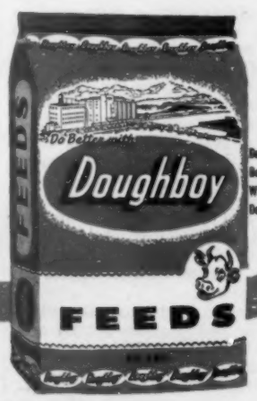


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# Formula Feed Production and Consumption, by States, 1956-57

**In Thousands of Tons (000's Omitted)**

Copyright 1958, The Miller Publishing Co.

| | —PRODUCTION— Total | | —CONSUMPTION— Total | | Poultry | | Dairy | | Swine | | ††Other | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1956 | 1957 | 1956 | 1957 | 1956 | 1957 | 1956 | 1957 | 1956 | 1957 | 1956 | 1957 |
| *Alabama | 557 | 608 | 583 | 667 | 445 | 522 | 83 | 85 | 38 | 45 | 17 | 15 |
| †Arizona | 40 | 39 | 193 | 188 | 65 | 63 | 14 | 14 | 4 | 5 | 110 | 106 |
| *Arkansas | 463 | 479 | 773 | 825 | 579 | 636 | 123 | 112 | 40 | 44 | 31 | 33 |
| ‡California** | 4,557a | 4,477b | 4,578 | 4,520 | 2,055 | 2,173 | 869 | 808 | 278 | 353 | 1,376 | 1,186 |
| *Colorado | 235 | 233 | 188 | 186 | 82 | 76 | 18 | 18 | 20 | 30 | 68 | 62 |
| †Connecticut | 200 | 191 | 540 | 558 | 386 | 406 | 122 | 123 | 17 | 15 | 15 | 14 |
| *Delaware | 644 | 685 | 328 | 331 | 309 | 311 | 13 | 14 | 3 | 3 | 3 | 3 |
| *Florida | 235 | 256 | 902 | 917 | 676 | 693 | 136 | 145 | 62 | 53 | 28 | 26 |
| *Georgia | 1,382 | 1,508 | 1,413 | 1,784 | 1,086 | 1,454 | 202 | 200 | 93 | 99 | 32 | 31 |
| ¶Idaho | 53 | 52 | 198 | 189 | 61 | 60 | 27 | 27 | 50 | 41 | 60 | 61 |
| ¶Illinois | 2,264 | 2,316 | 1,418 | 1,431 | 768 | 755 | 129 | 125 | 341 | 372 | 180 | 179 |
| *Indiana | 1,186 | 1,208 | 1,450 | 1,582 | 986 | 1,077 | 129 | 130 | 262 | 305 | 73 | 70 |
| *Iowa | 1,421 | 1,536 | 1,564 | 1,617 | 580 | 556 | 84 | 78 | 60 | 656 | 340 | 327 |
| *Kansas | 431 | 479 | 515 | 556 | 304 | 303 | 24 | 24 | 97 | 138 | 90 | 91 |
| *Kentucky | 495 | 522 | 425 | 440 | 218 | 225 | 96 | 100 | 69 | 75 | 42 | 40 |
| *Louisiana | 372 | 400 | 316 | 341 | 164 | 180 | 110 | 113 | 25 | 36 | 17 | 12 |
| ¶Maine | 116 | 111 | 555 | 571 | 384 | 407 | 127 | 123 | 19 | 21 | 25 | 20 |
| †Maryland | 428 | 402 | 601 | 636 | 472 | 507 | 82 | 83 | 26 | 26 | 21 | 20 |
| †Massachusetts | 410 | 392 | 663 | 650 | 468 | 463 | 125 | 124 | 33 | 39 | 27 | 24 |
| §Michigan | 172 | 175 | 783 | 780 | 418 | 411 | 191 | 190 | 94 | 100 | 80 | 79 |
| *Minnesota | 1,235 | 1,259 | 819 | 829 | 482 | 469 | 115 | 118 | 202 | 223 | 20 | 19 |
| *M'ssissippi | 508 | 590 | 509 | 513 | 388 | 396 | 78 | 77 | 25 | 24 | 18 | 16 |
| *Missouri | 1,957 | 2,037 | 1,208 | 1,175 | 539 | 509 | 359 | 349 | 199 | 222 | 111 | 95 |
| †Montana | 102 | 101 | 133 | 133 | 35 | 36 | 11 | 11 | 3 | 3 | 84 | 83 |
| †Nebraska | 661 | 654 | 591 | 599 | 230 | 222 | 22 | 22 | 139 | 154 | 200 | 201 |
| †Nevada | 4 | 3 | 23 | 23 | 6 | 6 | 14 | 14 | 1 | 1 | 2 | 2 |
| ¶New Hampshire | 235 | 224 | 282 | 290 | 188 | 196 | 74 | 73 | 10 | 12 | 10 | 9 |
| †New Jersey | 392 | 403 | 860 | 856 | 594 | 600 | 159 | 164 | 57 | 46 | 50 | 46 |
| †New Mexico | 95 | 94 | 185 | 174 | 94 | 91 | 17 | 17 | 4 | 4 | 70 | 62 |
| †New York | 3,669 | 3,709 | 2,402 | 2,433 | 906 | 901 | 1,237 | 1,239 | 151 | 187 | 108 | 106 |
| *North Carolina | 982 | 1,072 | 1,068 | 1,165 | 815 | 892 | 119 | 120 | 102 | 120 | 32 | 33 |
| *North Dakota | 60 | 61 | 63 | 56 | 22 | 22 | 3 | 3 | 20 | 21 | 18 | 10 |
| *Ohio | 2,408 | 2,401 | 1,045 | 1,029 | 598 | 600 | 196 | 178 | 171 | 186 | 80 | 65 |
| *Oklahoma | 429 | 459 | 516 | 555 | 278 | 283 | 115 | 135 | 53 | 68 | 70 | 69 |
| †Oregon | 474 | 490 | 468 | 470 | 266 | 262 | 140 | 148 | 20 | 20 | 42 | 40 |
| *Pennsylvania | 1,212 | 1,223 | 1,450 | 1,484 | 879 | 856 | 389 | 398 | 105 | 142 | 77 | 88 |
| †Rhode Island | 4 | 3 | 66 | 71 | 38 | 41 | 26 | 26 | .. | 2 | 2 | 2 |
| *South Carolina | 227 | 226 | 306 | 315 | 209 | 208 | 48 | 49 | 31 | 38 | 18 | 20 |
| *South Dakota | 77 | 79 | 173 | 186 | 118 | 127 | 31 | 32 | 11 | 14 | 13 | 13 |
| *Tennessee | 1,412 | 1,432 | 564 | 608 | 366 | 391 | 111 | 113 | 71 | 88 | 16 | 16 |
| *Texas | 1,874 | 2,075 | 2,172 | 2,138 | 813 | 933 | 371 | 370 | 152 | 150 | 836 | 685 |
| ¶Utah | 203 | 201 | 309 | 319 | 199 | 199 | 92 | 101 | 4 | 6 | 14 | 13 |
| †Vermont | 556 | 527 | 478 | 483 | 113 | 112 | 331 | 339 | 18 | 18 | 16 | 14 |
| *Virginia | 687 | 667 | 749 | 769 | 514 | 514 | 142 | 142 | 64 | 83 | 29 | 30 |
| *Washington | 633 | 633 | 624 | 635 | 388 | 389 | 183 | 175 | 9 | 19 | 44 | 52 |
| *West Virginia | 28 | 29 | 331 | 348 | 229 | 222 | 66 | 72 | 24 | 41 | 12 | 13 |
| *Wisconsin | 502 | 501 | 681 | 698 | 325 | 327 | 199 | 205 | 110 | 121 | 47 | 45 |
| ¶Wyoming | 62 | 52 | 43 | 42 | 17 | 18 | 5 | 4 | 2 | 2 | 19 | 18 |
| TOTALS | 36,249 | 37,474 | 36,124 | 37,165 | 20,185 | 21,100 | 7,757 | 7,730 | 3,889 | 4,471 | 4,293 | 3,864 |

*Based on state reports on tonnages and feed taxes paid, and data on in-state manufacture and state regulatory laws.
†Includes estimates by state universities, experiment stations and state plant boards.
‡Includes two above.
aIncludes 1,140,000 tons manufactured and sold by commercial feeders for 1956.
bIncludes 958,000 tons manufactured and sold by commercial feeders for 1957.
¶Estimated.
§Estimate on brand basis by state department of agriculture.
**Fiscal year.
††Includes cattle, calf, sheep, dog, cat, horse, mule and other pet feeds.

Estimates of formula feed production and consumption by major classes for each state in 1956 and 1957 have been prepared by the research department of Feedstuffs.

The figures in the accompanying table show total feed production and total feed consumption in each state. In addition, there is a breakdown by types of feed in the consumption category.

The classifications include all poultry feed, dairy feed, swine feed and "other" feeds. The "other" category includes beef cattle, calf, sheep, horse, mule, dog, cat and other pet feeds.

All available sources were used in compiling the data. One of the basic sources, where available, was state control officials' reports on tonnages of feed sold, based on tax tag sales and tonnage reports.

In some cases, where no official reports were available, estimates were made by state colleges, experiment stations and state plant boards, and these were involved in the above data.

Guides in the production estimates included U.S. Bureau of Census data for the various states and American Feed Manufacturers Assn. reports on total production.

Also reflected in the compilation of figures is information on animal and poultry numbers and production, and feeding practices.

The statistics used in this tabulation indicate 1957 increases in production and consumption over 1956, with indicated gains in swine and poultry feed bringing the increase. Partly because of fewer flock replacement chickens raised in 1957, some reports have not indicated much poultry feed change in 1957.

Some of the 1957 figures in particular will be subject to revision when later official reports are available.

The feed consumption total for 1957 is shown to be approximately 37.1 million tons, while the 1956 total is indicated to be 36.1 million tons.

States leading in formula feed production, the report shows, include California, Georgia, Illinois, Indiana, Iowa, Minnesota, Missouri, New York, Ohio, Pennsylvania, Tennessee and Texas.

Most of these same states also are among the top states in formula feed consumption.

Formula feeds, as the term is used in this report, are feeds mixed specifically for certain species of animals and for certain uses.

This report is the fifth state-by-state feed consumption and production report prepared and published by Feedstuffs.

### OPENS FEED STORE

KEOSAUQUA, IOWA—James Fulton has opened a combination feed store and filling station at the north edge of Keosauqua.

## Jack J. Jacobson of Lexington, Neb., Dies

LEXINGTON, NEB.—Jack F. Jacobson, 34, vice president and manager of the feed division of the Lexington Mill & Elevator Co., died unexpectedly May 11 as the result of a heart attack.

Mr. Jacobson joined the Lexington firm in 1947, after serving with the U.S. Marine Corps from 1943 to 1946. He was the son of the late president of the company, G. Kenneth Jacobson, who died in October, 1957. He was elected a vice president of the company last February.

Mr. Jacobson was a director of the Midwest Feed Manufacturers Assn. and took an active part in feed industry affairs.

Surviving are his widow, Mrs. Garland Jacobson, two daughters, Susan, 9, and Patty, 4, and a son David, 5. Also surviving is his mother, Mrs. G. K. Jacobson.

## *Milwaukee Exchange Observes Centennial*

MILWAUKEE — A centennial, marking a point in the organizational history of the Milwaukee Grain Exchange, was celebrated at a luncheon ceremony May 6 on the trading floor of the exchange.

The celebration was in honor of the merger of the old Milwaukee Board of Trade and the Corn Exchange in 1858 to become known as the Chamber of Commerce. In 1931 the name was changed to the Milwaukee Grain and Stock Exchange. This was shortened to the present name in 1946.

The luncheon ceremony, attended by about 150 exchange officials, grain business executives and others, included installation of new officers of the exchange.

George D. La Budde, La Budde Feed & Grain Co., was recently reelected president; John G. Davis of John G. Davis, Inc., was elected vice president, and James G. O'Brien was elected to his 13th term as secretary. Members of the boards of arbitration and appeal were reelected.

### SHEEP RESEARCH GRANT

BERKELEY, CAL.—A group of donors in California has given a total of $1,621.50 to the University of California division of agricultural science as a grant to promote a study on summer pneumonia and other sheep diseases. The research will be carried out at the university's Davis campus. Included among the donors are several lamb feeders.

**BROILER PROMOTION**—More than 60,000 people were served barbequed chicken during a series of Chick-N-Ques sponsored by Georgia Future Farmers and Future Homemakers of America as a promotion plan for the state's broilers. Shown in the picture is Sally Warren, Gwinnett County FHA member, as she helps out with her club's Chick-N-Que at Lawrenceville. At the time the number of people served was totaled, several other Chick-N-Ques were yet to take place.

## New Honegger Dealers

FAIRBURY, ILL.—Five Michigan, Iowa and Ohio firms have announced recently that they will handle the complete line of products manufactured by Honeggers' & Co., Inc., Fairbury. The five are Camden (Mich.) Feed & Supply; Elk Horn (Iowa) Produce; Wilson & Co., Reinbeck, Iowa; Riegel Feed & Grain, New Paris, Ohio, and Borculo (Mich.) Farm Service.

It's DANNEN for FERTILIZER and

- Feed Ingredients
- Soybean Oil Meal
- Tankage, Meat Scraps
- Cottonseed Meal
- Grain Fumigants

**DANNEN MILLS, INC.**
Grain and Jobbing Division
St. Joseph, Mo. Phone 3-0281

DANNEN

# AFMA... we salute you in your GOLDEN YEAR

Tastelation®

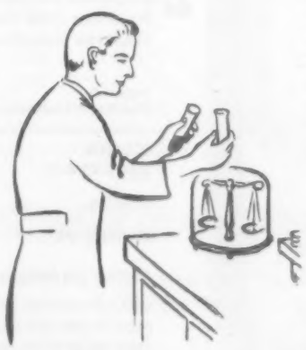
Your TASTELATION MAN says:

*ONE FLAVOR CANNOT SERVE ALL FEEDS!*

Take advantage of our . . .

# NEW ENGINEERING SERVICE

For your convenience and use we announce that our completely staffed, modern Laboratory and Research Departments are now opened for your use absolutely free of charge. . . . Just send us five pounds of each of your feeds, along with an ingredient and purpose tag on each, and we will ENGINEER the proper flavor application to meet the individual needs of **all your** feed products!



Since feed formulations differ and each Manufacturer applies certain factors to build nutrition, palatability and acceptability . . .

*One Flavor Cannot Serve All Feeds!*

**Let our Laboratory and Research Departments go to work for you . . . NOW!**

**By close examination and tests of your feed products in our Laboratory and Research Departments we will determine the RIGHT flavor and LEVEL OF USE for your individual formulation to insure *maximum flavor efficiency!***

**After *complete* tests and selection of our various flavors have been made we will return your completed samples, along with a full report, to you, without obligation on your part!**

**See for yourself how Taste Engineered Feeds can improve animal palatability and acceptability plus customer acceptability. Save time and reduce manufacturing cost through proper distinguishing Flavor-Aroma levels.**

**ACT TODAY. . . . Do not delay. . . . Send your SAMPLES NOW! . . . Samples will be considered in order received; first come, first served**

**For full details contact your nearest Taste Engineering Representative**

*Engineered Taste . . . a Must in Modern Feeds*

# TASTE ENGINEERING, INC.

**1401 West Hubbard Street**

**Laboratory & Research Depts. Chicago 22, Illinois MOnroe 6-5255**

## FOR LOW-LEVEL BROILER RATIONS

# Six new tests on one conclusion

**1 UNIVERSITY OF MASSACHUSETTS TEST** compared from the standpoint of growth response, 4 grams of zinc bacitracin with 4 grams of penicillin. The No. 943 cross from Hubbard farms, Walpole, N. H., was used in this trial. Each antibiotic was fed to 16-bird replicates.

| Treatment (32 birds per treatment) | Antibiotic Per Ton of Feed (grams) | Average Male Wt. 8 wks. (lbs.) | lb. feed per lb. gain | Mortality (Each Treatment 32 birds started) |
|---|---|---|---|---|
| Control | 0 | 3.26 | 2.15 | 1 |
| BACIFERM (zinc bacitracin) | 4 | 3.34 | 2.16 | 0 |
| BACIFERM (zinc bacitracin) | 6 | 3.38 | 2.11 | 1 |
| Penicillin | 4 | 3.37 | 2.11 | 2 |

This test shows that the use of either 4 grams or 6 grams of zinc bacitracin per ton of feed gives results fully equal to 4 grams of penicillin.

**2 UNIVERSITY OF GEORGIA FEEDING TRIAL** compared zinc bacitracin at a 4 gram per ton level with penicillin at a 4 gram per ton level. Six groups of broiler type chicks (Thompson's White Rocks) consisting of 20 males and 20 females per replicate were raised in batteries to eight weeks of age.

| Treatment (40 birds per treatment) | Antibiotic Per Ton of Feed (grams) | Av. Wt. 8 weeks (lbs.) | Feed Conversion |
|---|---|---|---|
| BACIFERM (zinc bacitracin) | 4 | 2.61 | 2.13 |
| Penicillin | 4 | 2.58 | 2.12 |
| BACIFERM®-PB* | 4 | 2.69 | 2.23 |

*contains zinc bacitracin plus penicillin (3.1 ratio)

In this 8-week test, zinc bacitracin at 4 grams per ton did the same job as 4 grams of penicillin or 4 grams of the combination including zinc bacitracin. There was no significant difference in results at the end of 4 weeks or 8 weeks.

**3 ALABAMA POLYTECHNIC INSTITUTE** recently completed an experiment in which the performance of a diet containing a low level of zinc bacitracin was compared with one containing penicillin. A Vantress-Nichols cross was used in 20-bird replicates. Tests were conducted in standard batteries to almost 5 weeks, then shifted to outdoor finishing pens.

| Treatment (40 birds per treatment) | Antibiotic per Ton of Feed (grams) | Av. Weight 8 weeks (lbs.) | Lb. Feed Per Lb. of Gain |
|---|---|---|---|
| BACIFERM (zinc bacitracin) | 4 | 2.21 | 2.41 |
| BACIFERM-PB* | 4 | 2.25 | 2.45 |
| Penicillin | 4 | 2.21 | 2.54 |

*contains zinc bacitracin plus penicillin (3.1 ratio)

The findings from this 8-week experiment show that Baciferm at a level of 4 grams per ton of feed stimulated growth of broilers as much as 4 grams per ton of penicillin. This would indicate that zinc bacitracin is equal to penicillin as a growth stimulant. Hot weather near the end of the period is believed to be responsible for the slow growth.

**4 FEED MANUFACTURER IN SOUTHEAST** has completed his own feeding trial on low-level zinc bacitracin versus low-level penicillin. Results were derived from the average of four replicates containing 25 males and 25 females of the Vantress-Arbor Acre Cross.

| Treatment (200 birds per treatment) | Antibiotic Per Ton of Feed (grams) | Avg. wt. 56 Days (lbs.) | Feed Efficiency lb. feed per lb. gain | Cost per lb. meat |
|---|---|---|---|---|
| Penicillin | 4 | 3.183 | 2.31 | 14.73¢ |
| BACIFERM (zinc bacitracin) | 4 | 3.192 | 2.30 | 14.66¢ |
| BACIFERM-PB* | 5 | 3.19 | 2.30 | 14.70¢ |

*contains zinc bacitracin plus penicillin (3.1 ratio)

In this 56-day test, 4 grams of zinc bacitracin and 4 grams of the combination including zinc bacitracin proved just as effective as 4 grams of penicillin. This manufacturer was so convinced by the results, he's including zinc bacitracin in all his broiler feed formulations.

# antibiotics lead to

**the buy is Baciferm®**— zinc bacitracin antibiotic supplements. New proof of effectiveness comes from universities and commercial feeding trials. Six different tests show that zinc bacitracin at 4 grams per ton of feed can replace penicillin in poultry rations – and give the same growth response.

**5** **LEADING NORTHEASTERN UNIVERSITY** compared growth response and feed conversion of broiler starter and finisher rations containing 4 grams of zinc bacitracin with rations containing 4 grams of penicillin. Duplicate lots of 50 Cobb's White Plymouth Rock broiler chicks of mixed sexes were reared in floor pens on straw litter in a commercial type broiler house considered clean and "uninfected" since it had not been used for a long period of time. The test was run during one of the coldest winters experienced in this area.

| Treatment (100 birds per treatment) | Antibiotic Per Ton of Feed (grams) | Av. Weight 9 Weeks (lbs.) | Feed Efficiency lb. feed per lb. broiler |
|---|---|---|---|
| Control | 0 | 3.43 | 2.44 |
| BACIFERM (zinc bacitracin) | 4 | 3.49 | 2.40 |
| Penicillin | 4 | 3.40 | 2.40 |

Although the differences were slight, the Baciferm supplemented feed did produce better results. This controlled test indicates that 4 grams of zinc bacitracin can definitely replace 4 grams of procaine penicillin for growth stimulation.

**6** **BROILER TRIAL** conducted by a commercial test farm. Birds were reared on floor-type pens up to nine weeks. Low levels of zinc bacitracin and penicillin were fed to duplicate lots of 250 cockerels and 250 pullets.

| Treatment (1000 birds per treatment) | Antibiotic per ton of Feed (grams) | Av. Wt. 9 weeks (lbs.) | Lb. Feed Per Lb. Gain |
|---|---|---|---|
| BACIFERM (zinc bacitracin) | 4 | 3.2 | 2.48 |
| Penicillin | 4 | 3.2 | 2.48 |

Throughout this 9-week test, extremely hot and dry weather persisted. Birds were not debeaked and showed excellent health, 4 grams of zinc bacitracin performed identically with 4 grams of penicillin and weight gains were good.

**PENICILLIN MEETS ITS MATCH!** All six tests conclusively show that the zinc bacitracin in Baciferm does an equally effective gram-for-gram job. Baciferm is competitively priced, too. There are many other advantages from using Baciferm at low and high levels for broiler, layer, turkey and swine feeds. For instance, only Baciferm contains the antibiotic zinc bacitracin, made exclusively by CSC under Patent No. 2,809,892 issued October 15, 1957. Zinc bacitracin provides greater antibiotic stability in storage and pelleting. And Baciferm costs from $3 to $6 per ton less than the tetracyclines. In other words –

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(Zinc Bacitracin Antibiotic Supplements)

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## *Feed for Thought*

By Dr. H. S. Wilgus

**SURVIVAL OF THE FITTEST**

Evolution in agriculture has reached a tempo approaching that of revolution. Integration into agri-business is having a profound influence on the feed industry. Reactions of feed men vary from optimism to despair. Human nature resists change. Change is uncomfortable, but is required for progress. It furnishes the strong with opportunity.

Many feed manufacturers are feeling the squeeze between two apparently opposed aspects of integration. On the one side, the feed industry is entering increasingly into animal production, directly and indirectly. On the other, larger producers and processors are incorporating feed manufacturing facilities into their operations. This is natural because feed is a major cost item in animal production.

Actually, these are not opposing forces but different expressions of the same force—integration into a coordinated agricultural economy, geared to orderly production, processing, and marketing to supply demand most economically.

Thus, it is not a matter of fighting such forces, of whipping them or joining them, it is a matter of cold analysis of where and when one can profitably provide products and services that are needed in this ever-changing economy.

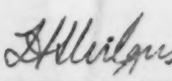
For example, consider the poultry processor or hatcheryman growing several hundred thousands turkeys. He must cut feed costs to the minimum yet desires to feed complete rations throughout the life cycle. He has his own servicemen and program. Direct purchases of commercial feed in bulk still leave him with feed as a major expense. He figures ingredient costs for adequate rations and sees further savings.

Here is a "gone goose" for commercial complete feed. You might sell him on buying your concentrates to mix with ground grains for building his rations. He might require "super concentrates" to mix with soybean meal and ground grains. He must be convinced that you have something he needs and has not, such as skills in obtaining and blending vital ingredients of satisfactory quality to build concentrates for him, technical information on how to properly mix them with grains and roughages to provide most efficient rations, and even advice and aid in obtaining and using ingredients and equipment.

Losing volume doing this? It is already lost. Isn't part of a loaf better than none?

Our economy, which provides us the highest material standard of living in history, is founded on competition. Success under this system is earned only by anticipating needs and meeting them with necessary products and services.

Survival of the fittest is still law.



VICE PRESIDENT AND DIRECTOR OF RESEARCH, PETER HAND FOUNDATION

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## Speaker Emphasizes Quality Importance In Feed Manufacture

ST. PETERSBURG, FLA.—Speaking at a recent meeting of the Southeastern Regional Renderers Assn. in St. Petersburg, Frazier V. Rogers emphasized as a part of his talk that to survive in the present efficiency market the modern feed manufacturer is compelled to produce a quality product.

Mr. Rogers, district manager for the General Mills, Inc., Larro feed division, said his firm's research staff has developed improved methods for local laboratories to use in analyzing samples of incoming ingredients, and that if any ingredient is not up to standard, the lot is rejected.

The company also publishes a "standards and quality" manual for the use of mill supervisors and buyers. It lists all approved materials and their minimum-maximum specifications.

Mr. Rogers listed 12 questions which he said the feed man should have answered before he considers using any ingredient in feed formulation: Is the material free-flowing? What chemical reaction, if any, takes place when combined with any of the materials to be incorporated? Will it aid or inhibit vitamin utilization? Will heat affect the nutrient value? Will it pellet satisfactorily? Is it palatable to all classes of livestock? Is it injurious to any class of livestock? Is it soluble? Has it residual qualities that might affect carcass quality due to toxicity, flavor, or texture? Is the texture and particle size uniform? Is the color uniform? Is there a steady supply available?

Mr. Rogers told some 70 persons present for the meeting that he expects a continuing increase in demand for animal fat in feed.

Looking ahead, he said that in food merchandising brand names probably will assume more importance, and more human food products will be produced to specification following the pattern of broilers. All of these things, he said, point in but one direction—quality products.

This means the feed industry must produce quality feeds to produce the right food efficiently.

## Turkey, Egg Promotion Launched in California

SAN FRANCISCO—New promotion efforts are being conducted for barbecue turkey and quality-controlled eggs in the San Francisco area.

A test program, sponsored by the California Turkey Advisory Board, on the quartered and cut-up turkeys designed for use in barbecues was conducted during February and March in the Sacramento and Fresno areas. The promotion is now being expanded on a state-wide basis. The campaign will concentrate on newspapers, and is expected to cost from $60,000-70,000 from May-September.

A similar program for the 11 western states is being organized by the Poultry & Egg National Board's western division and the Pacific Dairy & Poultry Assn. This campaign for the new turkey product will begin in July or August in Sunset, Western Family, Everywoman's and Family Circle magazines. Other western states will carry local and statewide promotions.

The quality-controlled Nulaid egg was introduced in the San Jose area in March, marketed by Poultry Producers of Central California. It is a premium-priced product sold in a new container and under refrigeration.

The campaign for the new product was expanded May 1 to include all of northern California and is being conducted through newspaper, radio and television advertising.

**FILM PREMIERE—Members of the executive committee and officers of the Midwest Feed Manufacturers Assn. recently saw the first showing of a new film, "New Horizons in Feeds and Feeding," made in part at the association's last convention. Left to right in the above picture are Jack Blanke, Atchison, Kansas, association treasurer; Hugh Kelley, Des Moines, honorary president; Harold Fouts, Nebraska City, Neb., executive committee; Lloyd Larson, executive vice president; Ray Ammon, St. Joseph, Mo., president, and Larry Alley, Kansas City, executive committee. On hand for the meeting but not present when the photo was taken was Fred Darragh, Little Rock, Ark.**

## *New Midwest Film On Feed Advances Has First Showing*

KANSAS CITY—The premier showing of a new film, "New Horizons in Feeds and Feeding," was made at a recent meeting in Kansas City of the executive committee of the Midwest Feed Manufacturers Assn.

The movie, a black and white sound film describing some of the nutritional advances made in recent years, is now available for distribution, the association announced.

"Presented in a professional, informal style, 'New Horizons' is designed for ready acceptance by television stations in all parts of the country, as well as for use in providing timely and interesting material for telling the 'feed story' at service club and farm meetings," said Lloyd Larson, Midwest executive vice president.

Running time is 30 minutes and 30 seconds. A cue sheet is provided for television stations to cut for showings in a half-hour program.

Continuing research conducted by colleges and the feed industry, toward providing more and better food, is presented in the film. The movie was filmed in part at the 1958 Midwest convention, where examples of feeding progress were outlined by Dr. E. E. Bartley, Kansas State College; Dr. Wise Burroughs, Iowa State College; Dr. J. R. Couch, Texas A&M College; Dr. E. L. Stephenson, University of Arkansas, and Dr. Rollin Thayer, Oklahoma State University.

Outright purchase of the film is $115, Mr. Larson said. It may be rented at $18 a week, which may be applied to the purchase price. Inquiries about purchase or rental of the film may be sent to the Midwest Feed Manufacturers Assn., 20 W. 9th St. Bldg., Kansas City 5, Mo.

# Kansas Grain, Feed Dealers Optimistic About 1958 Crop

By THOMAS E. LETCH
Feedstuffs Staff

WICHITA, KANSAS—Optimism about the coming Kansas wheat crop pervaded the atmosphere at the 61st annual convention of the Kansas Grain & Feed Dealers Assn. held at the Broadview Hotel May 1-3. Registrations totaled 430.

Although there were those at the convention who expressed fear that something would happen to keep the bright wheat prospects from being realized, the optimism dominated. And Kansas grain dealers are backing up that optimism by building new storage with an estimated capacity of 100 million bushels.

New president of the association is Milton L. Morrison, Morrison Grain Co., Inc., Salina. He succeeds R. P. Coupland, Tribune Grain Co., Tribune. David E. McKee, C-G-F Grain Co., Topeka, was elected vice president succeeding Mr. Morrison. O. E. Case, Hutchinson, was reelected executive secretary-treasurer.

All directors whose terms expired were reelected. They are S. Dean Evans, Sr., Evans Grain Co., Inc., Salina; H. J. Gudenkauf, Frankfort Grain Co., Frankfort; J. H. Voss, Voss Grain Co., Downs, and Royal R. Cox, Cox Grain Co., Iola. Other board members are Ellis K. Cave, Dodge City Terminal Elevator Co., Dodge City; Charles R. Coffey, Coffey Grain Co., Inc., Brewster; Oscar F. Lohoefener, Lohoefener Grain Co., Oberlin, and Ed Romain, Pillsbury Mills, Inc., Wichita.

A report from the membership committee revealed that the association has gone from 231 members in 1945 to 611 in 1958.

Two speakers from Washington appeared on the program. Raymond J. Pollock, director, grain division, Commodity Stabilization Service, U.S. Department of Agriculture, discussed the outlook for the trade in relation to the government. Alvin E. Oliver, executive vice president of the Grain & Feed Dealers National Assn., reported on various government developments affecting the grain trade.

Mr. Pollock reviewed the development of the American economy and told how the development of the agricultural production capacity and the development of the industrial capacity have outstripped the marketing and distribution phase of our economy. "Expanded markets and new industrial uses of agricultural products can provide the only lasting solution to our vastly increased agricultural productivity resulting from its mechanization," he said.

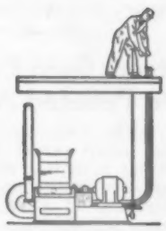
Citing the continuing build up of carryover stocks in food and feed grains and soybeans despite reduced acreage, Mr. Pollock appealed for support of legislation which will avoid piling up more surpluses and assist in the adjustments needed for the welfare of agriculture and the whole economy.

The grain trade will have to assume greater responsibilities in commercial grain handling, Mr. Pollock said. The trade will have to become more than a "junior partner of the Commodity Credit Corp." to make

Jacobson QUALITY

# AJACS-O-MATIC

## REMOTE SCREEN CHANGE HAMMERMILL



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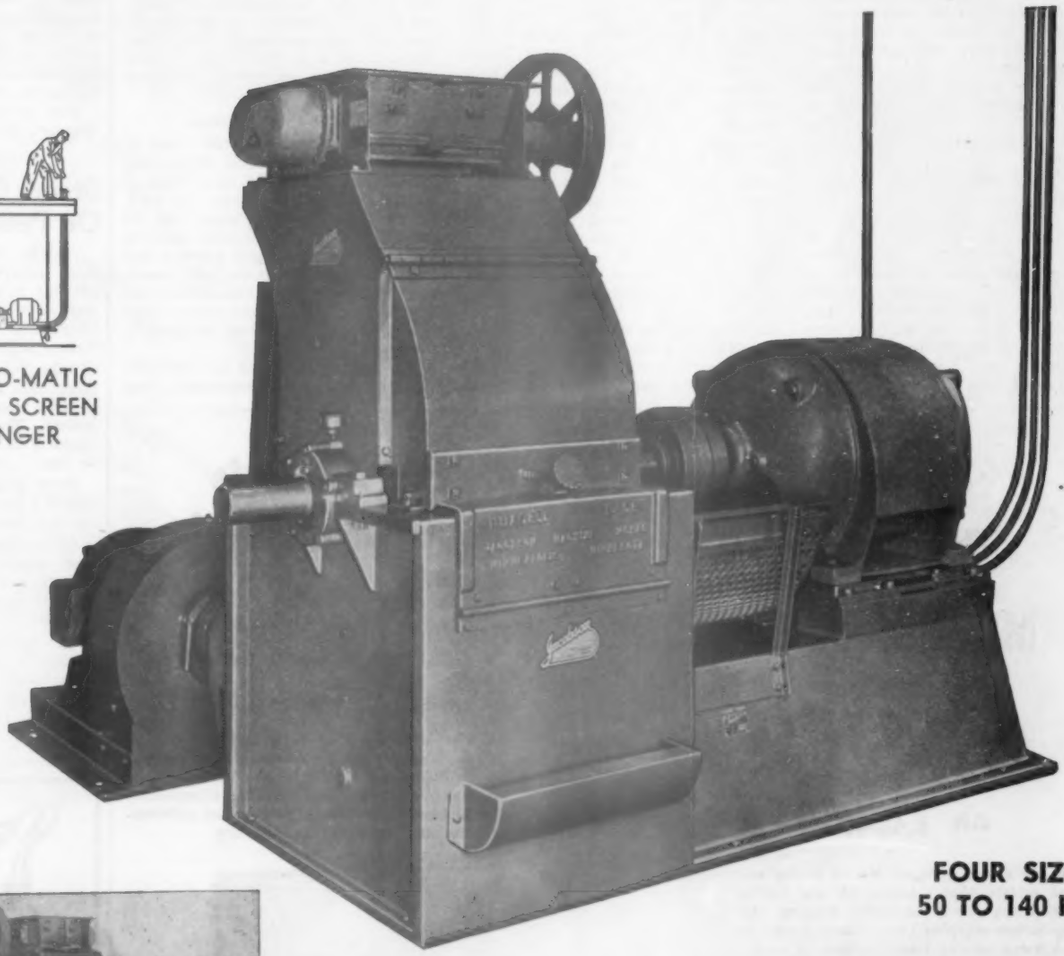
REMOTE SCREEN
CHANGER



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**50 TO 140 H.P.**

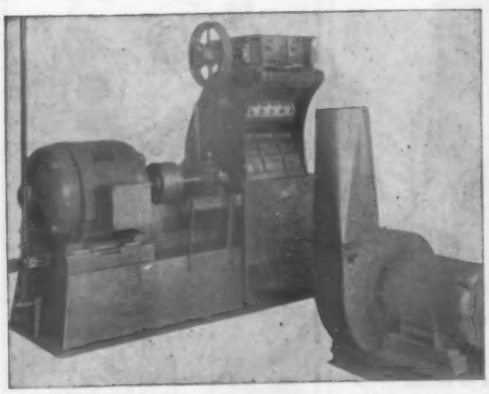

**Illustration shows separate motor driven fan and permanent magnet. Attached fan also available.**

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- **Quick substitution of other sizes — no tools**
- **Crusher housing shown — also available with open throat for hay grinding**

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# JACOBSON MACHINE WORKS

*48 Years of Continuous Service to the Feed Industry*

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the administration's plan for turning back more of the business to the trade succeed.

As a preface to his talk, Mr. Pollock announced that if anyone did not want to hear him commend the policies and the dedication of Ezra Taft Benson, secretary of agriculture, they should leave the room. No one left.

After many years of frustration, planning and negotiations, the trend of government operations in the grain trade has been reversed, Mr. Oliver said. He added that the new program is designed to encourage movement of feed grains from free market supplies into export channels. Where a subsidy is necessary, CCC will give a subsidy-in-kind grain payment at the seaboard to the exporter. The amount of the subsidy is to be on a bid basis.

Mr. Oliver said that the program for selling non-storable feed grains at the marketing points nearest the point of acquisition by CCC is of major importance to grain merchandisers and country elevator operators. He urged the grass roots segment of the grain industry to take advantage of this opportunity to merchandise more of the feed grains at the country level.

Mr. Oliver also informed the convention that the House Subcommittee on Labor Standards will hold hearings during June regarding the administration of wage-hour legislation. "The subcommittee is interested in hearing examples where the regulations on the area of production exemption have forced hardship on a business or industry," he said. "Now is the time for owners of country elevators to tell the Congress what they think of the narrow and unrealistic regulations as defined by the department of labor."

Mr. Oliver also stated that the Food & Drug Administration is interested in a movement toward tighter enforcement of sanitation standards in corn intended for human food. "It would be a difficult program to enforce because only 6-7% of our corn crop goes to human food, and because there is no difference in the price between corn for human food and corn for animal food," he said.

Mr. Oliver stressed, however, the continuing importance of assuring an adequate supply of sanitary corn for wet and dry corn processors, and urged the membership of the association to join in a "sincere and forceful campaign for better housekeeping in corn facilities both on the farm and in commerce." He said the goal of such an educational campaign would be clear—to show added income to the farmer who maintains his corn supplies free from the quantity and grade lossed suffered from rodents, birds and insects.

Mr. Oliver said that little new farm legislation will be passed in 1958.

He also recommended that country elevator operators recognize the changing conditions of agriculture and business. "Larger farms, fewer customers, urbanization of farm lands, the new federal highway program, availability of credit and financing, changes in transportation and communication will force warehousemen to plan today if they expect to be in business in the years ahead," he said.

### Grain Drying Discussed

Drying of grain was the topic of Ralph L. Lipper, Kansas State College. "We may have a good thing if we go at it with caution," he said. Drying of grain has been slow to catch on in Kansas, he said. But the data indicate that early harvest and then drying can reduce field losses, cut losses in storage from insects and microorganisms, permit early marketing and enable double cropping in some areas.

Mr. Lipper described the different types of dryers and commented that the high temperature dryers dry grain faster but require greater investment; and better management is needed to lessen the danger of damage to the grain.

The worries about quality loss of dried grain are exaggerated, according to Mr. Lipper. He said that they have not found the protein reduced in grain by high temperature drying. Corn dried in high temperatures creates problems for the wet millers because of a change in the starch, he said. On seed grains, the maximum temperature should be 110 degrees. As to the effects of drying on the milling quality of wheat, Mr. Lipper said that some varieties are improved and some are hurt.

The convention concluded with a banquet, floor show and dancing.

## Steers Gain Faster On Pelleted Alfalfa

DAVIS, CAL.—Beef steers fed alfalfa pellets gained .37 lb. per head per day more than steers fed alfalfa hay in a recent trial held on the University of California's Imperial Valley field station.

"The main reason for the extra gain," the report says, "was the increased consumption of alfalfa fed as pellets. The steers on pellets ate about 3 lb. more alfalfa than those on hay."

Both groups of animals also received 2 lb. of barley and 2 lb. of long oat hay daily over the 167-day trial.

All alfalfa used in the trial was of high quality; it tested about 21% protein and its estimated total digestible nutrient (TDN) value was 59-60%.

The investigators were Dr. James H. Meyer and Dr. Glen P. Lofgreen, department of animal husbandry, Davis, and the late Nicholas R. Ittner, who was attached to the field station.


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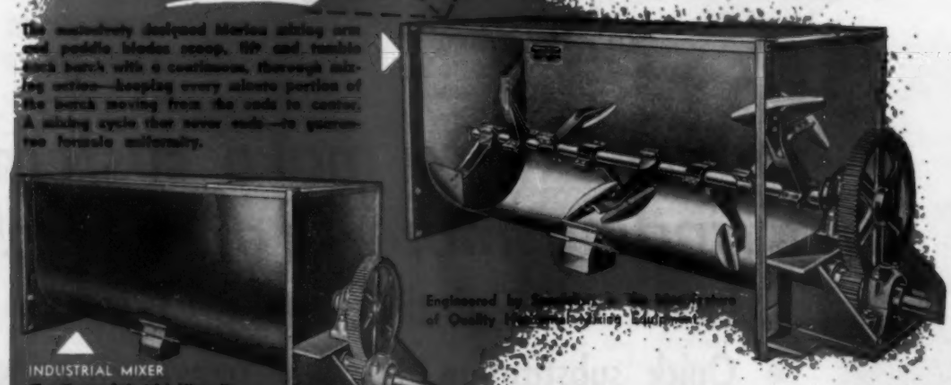

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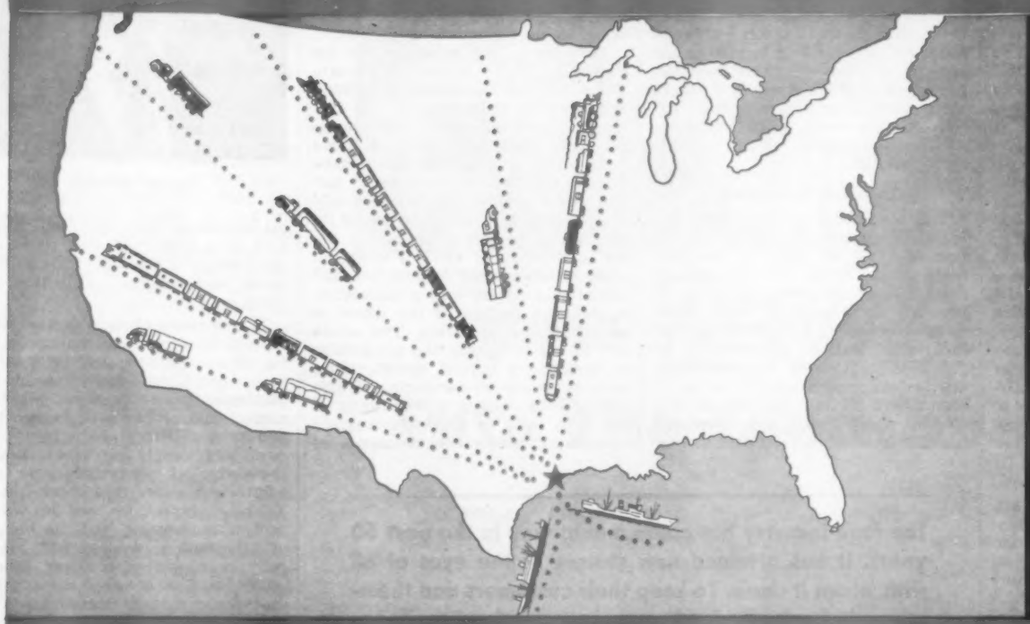

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**From a Foundation Built on 50 Years of Progress**

# Feed Industry Eyes Golden Opportunity In the Challenges of the Years Ahead

**By Oscar Straube**
**Chairman of the Board**
**AFMA**

*EDITOR'S NOTE: Where the feed industry has been, where it is now and where it is going—this is analyzed in the accompanying article by Oscar Straube, president of Pay Way Feed Mills, Kansas City, and chairman of the board of the American Feed Manufacturers Assn. Mr. Straube examines the industry situation and outlook at an appropriate time for such analysis. The AFMA is holding its 50th annual convention May 21-23 in Chicago, and the coming year, designated as the Golden Year, is set aside to take stock of the past half century of AFMA service and industry progress and to point the way to new challenges and opportunities in the future.*

50 YEARS OF afma SERVICE AMERICAN FEED MFRS. ASSN.

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Our chickens, for the most part, are descendants of the Malayan jungle fowl, and our meat animals are domesticated descendants of those which populated the fields and forests of early man. Some of them taste as though they have not descended very far. That's why spices and condiments play such an important part in old world cookery, and why European chefs are considered better than our Americans. They have to be. One who has eaten meat or eggs abroad very quickly comes to a full appreciation of the fine superior quality of the American varieties.

At this time when the national association of the feed industry is celebrating its Golden Anniversary, it is right that we should pay special tribute to the scientists, breeders, businessmen who are giving us steaks and chicken for broiling and other table delicacies, such as are known by few people in the world. And, may their promise of even finer meat, milk and eggs to come be carried out as successfully as has been the performance of the past two or three decades. And, may we in the feed industry, during the challenging years ahead, continue making our excellent contributions to producing this fine food.

### Scientific Advances

A major part of this progress during the past 50 years may be credited to the advancement made by the animal sciences. In the early days few scientists were employed in the feed industry, or by its suppliers, so the vast majority of data came from college of agriculture experiment stations. Sometimes this was received by feed manufacturers (who were even then prime disseminators of information) in a fine manner, and sometimes there were rather distasteful occurrences.

One of these was a circular issued by a manufacturer, shortly after the epoch-making vitamin D work at Wisconsin, which headlined: "This Cod Liver Oil Bunk." Such action could hardly create good will. However, there were two sides to this story. Many people feel that recent favorable work on pellets has vindicated the early position of many industry men, which was quite strenuously attacked by some individuals in colleges. The values of dehydrated alfalfa meal and soybean meal also were much in question by some college men and manufacturers. There is no doubt that faster progress could have been made in getting the benefits of these and other feed improvements to feeders, had there been the close relationship which exists today between these two highly important segments of the animal nutrition field.

### Research Broadened

The feed industry graciously acknowledges that the basic foundation of these 50 years of progress rests on the work done by agricultural colleges. However, the scope of research work has now been materially broadened, and the efforts of experiment stations, suppliers of ingredients and feed manufacturers are better coordinated. There is an atmosphere of mutual respect and esteem which results in increased benefits for feeders, and also in better food for our growing population. The industry has a full recognition of this fact and, acting accordingly, has made tremendous strides. Our cooperation with each other and with scientists in various fields proves that we have come of age—proves, too, that we are doing our utmost to render intelligently a conscientious service in the preparation of economical and efficient rations.

It is this awareness of our varied and complex obligations and our sincere desire to prove our worth which are making the feed industry great—thus raising our industry standing to new heights of importance and size. They are bringing us the increased confidence of all with whom we deal—government officials, college personnel, veterinarians, scientists, and last but most important, livestock and poultry feeders.

It is indeed heartwarming to know we have this fine friendly attitude on the part of the feeders, in particular. With increasing regularity, they come to us for advice and counsel before starting a project. They depend on our industry for know-how and helpful guidance so essential to their success. It is our obligation, as individuals and as an industry, to guard this trust conscientiously. That we shall do. The young men with scientific agricultural background and training who comprise the larger portion of today's feed industry personnel have proven in the past few years they have the capacity and the desire to do this with vigor and with utmost sincerity. They, I am certain, will carry on into the future in this same highly commendable fashion.

They have their work cut out for them—but there is no set pattern. The transition occurring in farming and feeding operations is of far-reaching consequences, with many problems. Some of these may prove quite severe and will continue to have a marked effect on our manner and method of doing business. Already the industry has lost a portion of its identity in certain situations. I refer to growing of broilers where in some instances feed formulation and manufacturing are only a calculated, mechanized portion of the whole in an integrated operation. The whole has as its objective the production of broilers to buyers' specifications, with emphasis on marketing. I also refer to the feeding and finishing of cattle in some of the large western operations, where the thousands of tons of mixed feed used are not a product of the feed manufacturing industry.

When I discussed this with a cattleman, he said: "Those fellows can read just the same as you feed men can. When some authority comes out with an idea, they can pick it up and try it out pretty fast, because they nearly always have some cattle in their pens. And what's more, they can hire a nutritionist who is also a cattleman and knows plenty well what they are doing most of the time."

### Must Do Outstanding Job

Consideration of these two operations brings into focus rather clearly the three primary functions of the feed industry. The first is feed formulation; second, manufacturing; and third, selling and servicing. To keep our customers in business and to stay in business ourselves, we must do an outstanding job in all three. That this can be done even in large specialized operations is evidenced by the major role feed manufacturers continue to play in the feeding of broilers.

Since feeding operations are becoming larger, and the larger operations lead to specialization, we in turn must make our approach as specialists with the know-how for solving the specific problems of these larger operators. When a man with 5,000 laying hens or 500 hogs has a feeding or management problem, he wants a well informed dependable answer, and is going where he can get it. This is why I believe the feed manufacturer and the feed dealer both have important work to do, and shall retain a dominant part in livestock and poultry production for many years to come.

**The feed industry has come a long way in the past 50 years. It has attained new stature in the eyes of all with whom it deals. To keep their customers and themselves in business, feed men must continue to do an outstanding job. They face problems and changes of far-reaching consequences. The challenges are many, but so are the opportunities which lie ahead for a young and virile industry. All are brought into focus in this, the Golden Year, as the AFMA celebrates its 50th anniversary of service and looks to the future in helping to keep the industry aggressively growing in size and stature.**

Oscar Straube

In operations of such size, all feeding will be done on a conversion basis. This requires expert formulation with specialized experience in the particular job to be done. Quality control and proper care in selection and preparation of ingredients become increasingly important. A wide knowledge of pharmaceuticals and additives of every type is imperative. Training, experience and know-how become paramount, and the breadth of information required will practically necessitate a corps of experts on the staff of the feed manufacturer. Some manufacturers say they have these now, and this is no doubt true; however, one needs only to make a cursory investigation of feeding in most any area to realize that the benefits of such advice and services have not as yet made much of an impression on the feeding of poultry and livestock on the average American farm where the bulk of our meat, milk and eggs is now being produced.

### Feeds of the Future

Conversion feeding requires a controlled feeding program, generally with a complete feed. The increased use of complete rations means more mechanization in preparation. Pellets, granules and processed feeds will offer the advantages of better conversion and less labor. They are foolproof, less susceptible to feeding errors, and easier to handle, in particular, as feeders themselves continue to mechanize their operations.

Furthermore, it is quite possible that in time the dextrinization of starches and the further processing of grains and other ingredients may lead to the elimination of raw grain feeding. This means more efficient and more economical feeds will be made. Fewer pounds of feed will be required per production unit. Protection against many diseases and the elimination and control of parasites will be furnished by these feeds of the future.

### Role of the Dealer

Rations of this type require good management practices if they are to be used most efficiently. This is where the dealer organization comes in. I say "organization" because I believe just that. There will be fewer dealers, but they will be larger, performing many functions, supplying many services and covering a much wider area than is covered by today's dealers. They will have servicemen highly trained, probably by the manufacturer, who can give immediate first aid on the average feedlot problems concerning management, feeding and disease control. They will have considerable money invested in their buildings and equipment. They will be a more important part of the community and will operate one of

its most successful business establishments.

The feed dealer and the feeder both will be good businessmen, well informed, and with a broad sense of their personal responsibilities. They will work more closely together on financing, marketing and related problems. There will be less shopping around by the feeder. Unless the feed or service fails, he very likely will feed the same formula feed year after year. This will be influenced by the fact that the end product is being produced to meet certain specifications as to size, color, quantity, quality and delivery. All three of us — manufacturer, dealer and feeder — know that with good personal incomes, desire replaces need, and if we produce the product desired by the public, we're in.

**Fight for Survival**

When we talk about this desire, we are not under the elms or in a streetcar. We are in a serious competitive fight against other foods for survival. People today are more health and nutrition conscious than at any time in history and are becoming more so. They are passing by the starches and—look out for this one — they are now going to work hammer and tongs on you know what—fat. We have bred for and fed for fat for many happy years. But now, we are going to have to change all that, or spinach and orange juice will take us out. The order comes back from John Q. Public through the processor for all meat, no fat; the broiler, an ideal meat protein product, soars into popularity; skim milk sales go up 25% in five years; young, tender, finished beef is in demand. The meat type hog stumbles and fumbles because one year the packers want fat and the next year they want lean. If it's non-fat type hogs they want, it's time for the Ozark entrepreneur to throw away his whining saw and quit blowing in them jugs. He can play a merry tune on the backbone of those razorback hawgs.

But seriously, it is up to the breeders, feed men, producers to furnish what is wanted at a fair price, or someone else will do it. Good feed and good management are not enough; we will have to have good stock, too. So among the feed manufacturer's group of scientists—nutritionists, pathologists, parasitologists and chemists—we will find a geneticist or two. This vast array of talent will be needed to meet the changing conditions and demands. If these men are not all in one organization, there will need be a close working arrangement, either through integrated operations or by mutual understandings.

**Strong Association Important**

To keep abreast of such changes requires an alert industry—flexible, efficient and courageous. I believe that our feed industry is such. I believe that our American Feed Manufacturers Assn., which this year starts its "Golden Year" of service, has been of inestimable help in keeping our industry aggressively grow-

(Continued on page 22)

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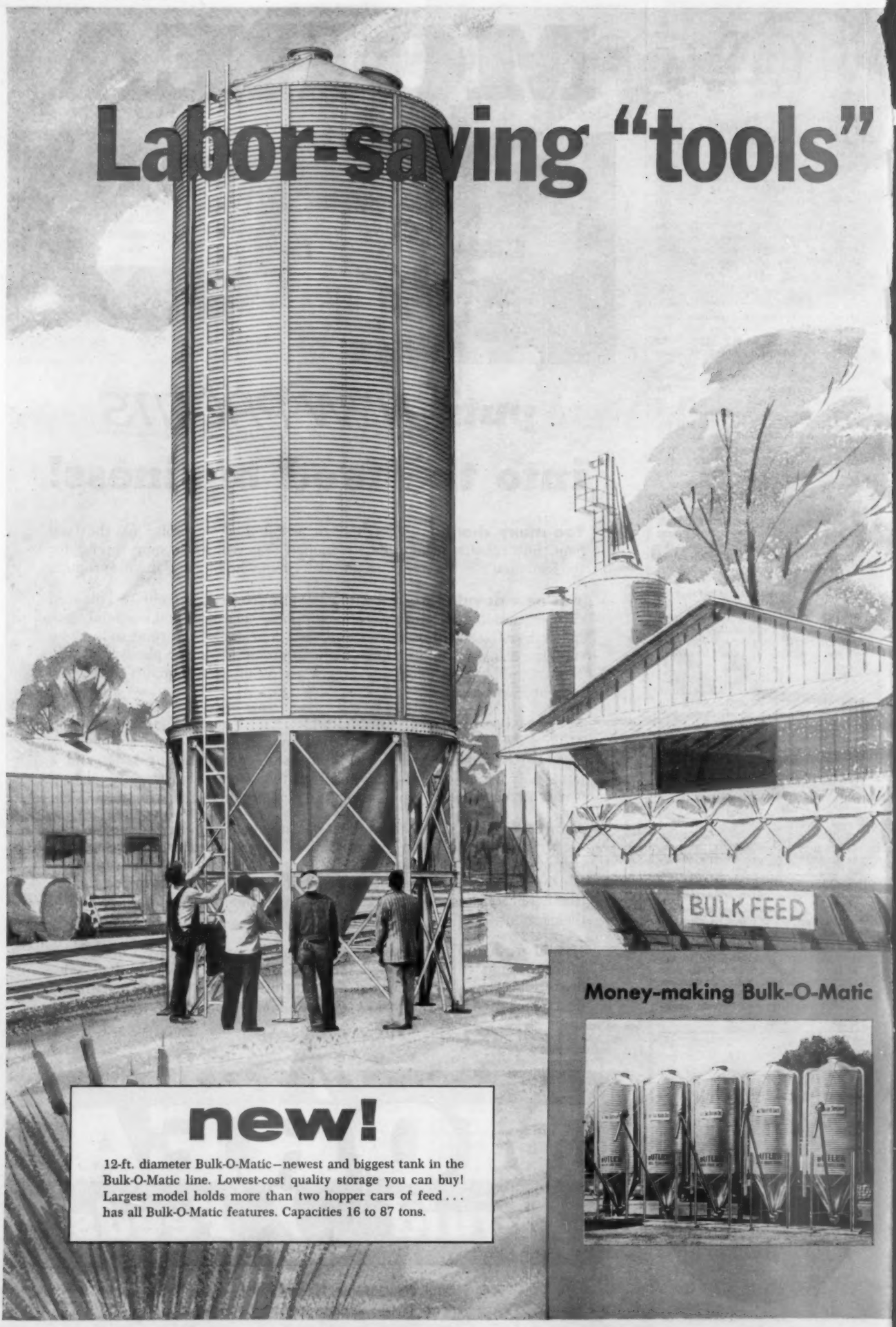


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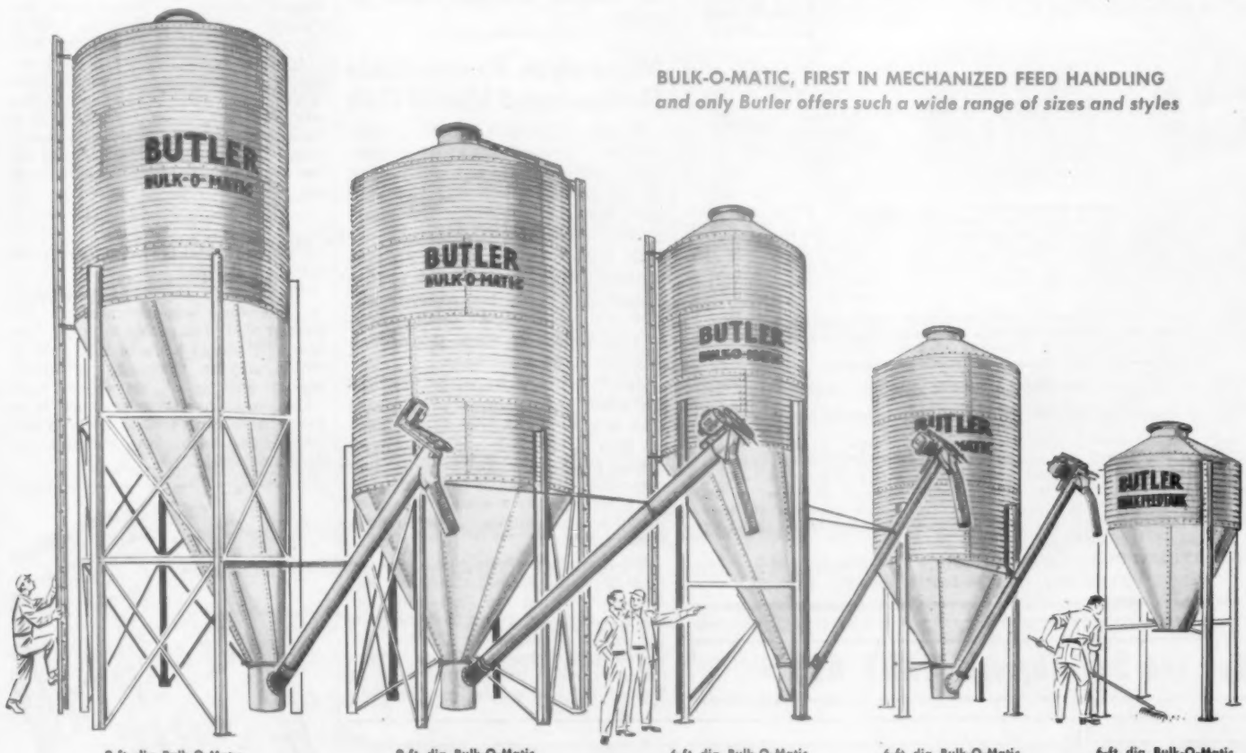


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ing in size and stature. The association has been a great source of good in developing excellent relations with agricultural colleges, feed control, U.S. Food and Drug, veterinarians, and others of importance to us. It will continue to benefit us in direct proportion to our support of it.

It is my thought that the need for a strong national association will become even greater as we move into the complicated years ahead. Relations with Food and Drug and feed control are apt to become more complex as we develop new medicated products. As an industry we need to continue and to expand our support of land grant colleges and their research programs. We have need for extensive research in marketing of meat, milk and eggs. There is also much to be done in developing industrial utilization of these foods and their by-products. Foreign markets as yet are practically untouched.

Great indeed are the opportunities which lie ahead of this young and virile industry. All are brought into focus in this, the Golden Year. May it and the future years be good for our industry and those whom we serve.

## Mississippi Researchers Recommend Use of Grit

STATE COLLEGE, MISS. — Mississippi State College researchers have recommended the use of grit by egg producers following two trials with hens fed all mash and mash-grain rations.

Dr. Elbert J. Day, Lester J. Dreesen and James E. Hill of the poultry department made the recommendation in a recent report of their findings in Mississippi Farm Research, a publication of the college.

Supplementary insoluble grit did not affect the performance of laying hens in a 10-month trial during 1955-56. But, in contrast, a significant increase in egg production and a corresponding increase in feed efficiency were observed as a result of feeding insoluble grit during a nine-month trial in 1956-57.

No explanation was given why the feeding of grit did not affect the performance during the first trial, but the report said the fact that the grit-fed birds employed in Trial 2 received grit from day-old to sexual maturity while the grit-fed birds in Trial 1 did not receive grit prior to the experimental period, may account for the difference.

"In view of the striking response to grit that was observed in the second trial, and considering the fact that it costs so little to feed grit, it would appear that egg producers should feed grit," the report said. "Also, most available evidence is in favor of feeding grit to the replacement flock during the starting and growing periods."

Paul Carey John Coates

**RESEARCH SCIENTISTS—Two research scientists have been added to the Special Chows division in the research department of Ralston Purina Co., St. Louis, according to Dr. R. M. Bethke, vice president. They are Dr. Paul L. Carey and John A. Coates. Dr. Carey joined the firm recently as a biologist. He is a graduate of Illinois Wesleyan College, holds an M.S. degree from Kansas State College and received a Ph.D. degree in biochemistry at Purdue. He has worked previously for Smith, Kline & French Pharmaceutical Co., Philadelphia. Mr. Coates, a native of Seattle, holds a degree in fish biology from the University of Washington. He will supervise the fish research work at the firm's new trout research installation at Twin Falls, Idaho. Mr. Coates previously worked for the Salmon Nutritional Laboratories at Seattle and for the Washington Fish & Wildlife Service.**

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## WHAT'S NEW IN FEEDING?

# Putting Research to Work

By Spencer H. Morrison, Ph.D., D.V.M.

### The Influence of Limited Feeding, Using High-Fiber Rations, Upon Growth and Carcass Characteristics of Swine

● R. A. Merkel, R. W. Bray, R. H. Grummer, P. H. Phillips and G. Bohstedt, University of Wisconsin; Journal of Animal Science, Vol. 17, No. 1.

**ABSTRACT**

Eight lots of 8 pigs (4 females, 4 males) each were randomly assigned at weaning to the experimental rations. The experimental rations were: self-fed basal containing 76% TDN; high protein self-fed (76% TDN); low protein self-fed (76% TDN); basal self-fed diluted with approximately 15.5% corn cobs (69% TDN); basal self-fed diluted with approximately 30% corn cobs (62% TDN); basal self-fed diluted with approximately 27.5% "high fiber poor quality" alfalfa hay (69% TDN); basal self-fed diluted with approximately 52% "high fiber poor quality" alfalfa hay (62% TDN); and a hand-fed negative control limited to 70% feed consumption of basal.

The alfalfa hay used was extremely weathered and contained a large proportion of stem to leaves. Both the alfalfa hay and corn cobs were ground to pass through a ⅛-in. screen. The basal ration contained 18.15% protein during the first period of the experiment (weight 36 to 125 lb.), and 14.09% protein during the second period (weight 125 to 210 lb.). The corresponding protein levels for the remaining rations during the first and second periods, respectively, were: high protein, 22.07, 18.12; low protein, 14.05, 10.99; corn cobs, 69% TDN, 15.63, 12.90; corn cobs, 62% TDN, 13.23, 11.73; alfalfa hay, 69% TDN, 16.85, 13.22; and alfalfa hay, 62% TDN, 15.59, 12.33.

The crude fiber level for the basal ration was 5.24% for the first period, and 3.14% for the second period. For the other rations during the first and second periods, respectively, it was: high protein, 5.65, 3.52; low protein, 4.81, 2.80; corn cobs, 69% TDN, 9.53, 7.83; corn cobs, 62% TDN, 13.56, 12.24; alfalfa hay 69% TDN, 12.67, 11.07; and alfalfa hay, 62% TDN, 19.85, 18.17.

When necessary, the rations were supplemented with bone meal to meet NRC recommendations, and all rations were fortified with irradiated yeast to furnish 90 IU of vitamin D per pound of feed. Trace mineralized salt (½%) and Aurofac (1%) were added to all rations. The basal ration was as follows during the first period: 14.7% oats, 56.86% corn, 4.9% tankage, 16.66% soybean oil meal, 4.9% alfalfa meal, plus Aurofac, trace mineralized salt and bone meal. During the second period it was: 1.95% tankage, 4.88% alfalfa meal, 79.98% corn, 10.73% soybean oil meal, plus Aurofac, trace mineralized salt and bone meal. All pigs were removed from the experiment as they individually reached 210 lb. liveweight. They were held off feed for 12 to 18 hours and subject to grading and carcass evaluation studies.

Restricting the energy level (TDN) severely limited daily gains, especially in the 70% of basal hand-fed lot and in the high alfalfa lot (62% TDN). The total cost per 100 lb. of gain was also the highest when lots were hand-fed or on low (62% TDN) rations. The higher feed costs are a reflection of both low TDN consumption and high labor costs for the hand-fed lot, and low TDN consumption for the 62% TDN groups.

Although feed consumption was increased by limiting TDN, the TDN consumed per 100 lb. of gain was remarkably alike in all lots except the 62% TDN alfalfa group. This is probably due to the physical impossibility of pigs to consume enough TDN on such a high fiber ration. Also, adverse palatability may have accounted for some of this difference. However, this is probably not the case since both groups of alfalfa fed pigs likely derived some of their daily TDN requirements from the alfalfa as their daily TDN consumption was less than

(Turn to RESEARCH, page 136)

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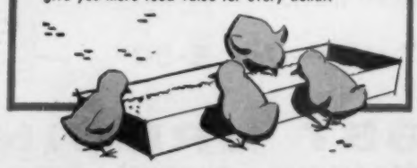

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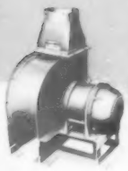

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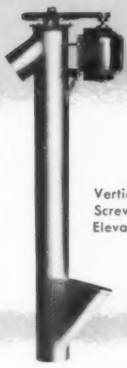

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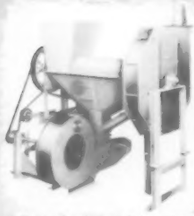
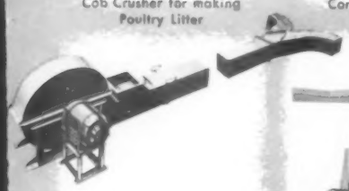


Corn Sheller with blowers for grain and cobs

Magnetic Separator protects mill machinery



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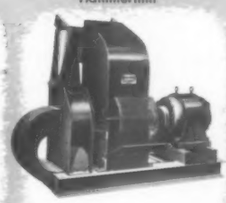
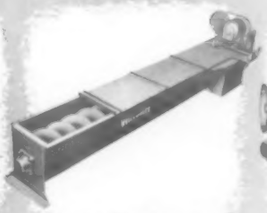
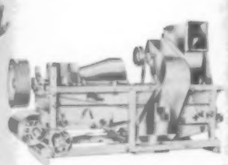


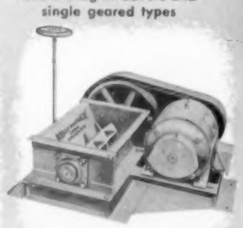
Instant Change Hammermills 12", 16", 20", 24" sizes



Pit Auger or Ear Corn Conveyor



Combined Sheller-Cleaner



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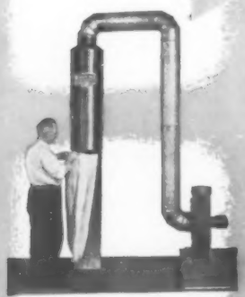
Grain Feeder



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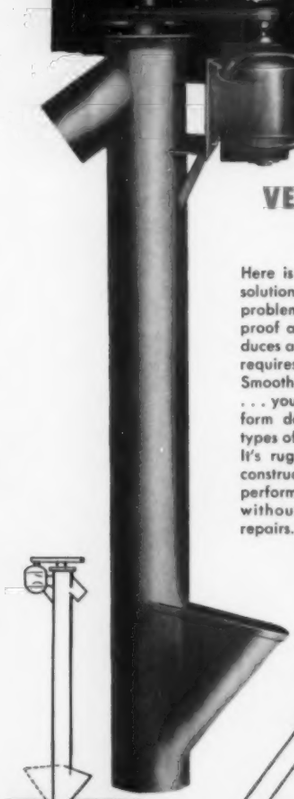

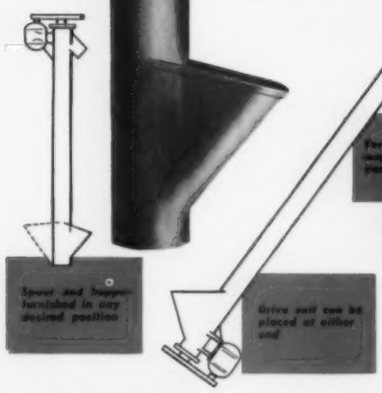
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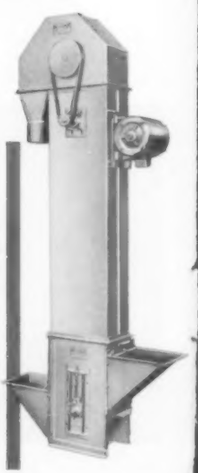

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DOING IT THE HARD WAY—These two poultry nutrition research assistants at Oklahoma State University look a little weary. For days and weeks, Earl Gleaves (left) and Kenneth Dunkelgod worked with desk calculators trying to come up with more practical feed formulas which would meet standards set using high-efficiency experimental turkey rations. After hundreds of hours of manual calculating—even when fortified with dozens of cups of coffee brewed on the poultry science department hot plate—it became apparent that attempts to balance 18 amino acids with hand calculations were much too slow for the complex, high-powered rations with which they were working.

THE MODERN WAY—Here, the Oklahoma researchers are balancing turkey feed formulas the modern way — and doing it in minutes rather than weeks. They are using an "electronic brain" to find the best combinations of ingredients to satisfy certain nutrient requirements. They look somewhat more relaxed. Seated at an IBM 650 computer is Kenneth Dunkelgod. To his right is another piece of the computing equipment. Looking on are, left to right, Dr. John Hamblen, director of the OSU computing center; Earl Gleaves, and Dr. Rollin H. Thayer, professor in charge of poultry nutrition research at the university.

# Feed Formulation in The Space Age

**Researchers put an electronic computer to work in balancing complex turkey feed formulas. It's a matter of condensing into minutes some exacting calculations that could take weeks or months under usual methods.**

By ROGER BERGLUND
Feedstuffs Managing Editor

Feed formulation in the space age.

That's the way you might describe some work being done by Oklahoma State University poultry researchers in designing experimental rations which will produce market turkeys on about 2 lb. of feed per pound of bird.

The space age angle comes in the use of an electronic computer to help formulate the feeds—the same sort of electronic brain used in determining the orbits of satellites now zooming through outer space.

While they're working with rations that wouldn't be considered conventional, the Oklahoma scientists don't figure they are way out in space. In fact, they don't even feel they are out in left field.

What they are doing is working toward economically practical feeds which will give growth and feed conversion similar to that already obtained in their turkey feed studies.

That's where the electronic brain comes in. It's the application of a space age tool to a down-to-earth problem of bringing still more efficiency and profit to turkey feeding. Use of the new tool was made imperative by the complexities of balancing the highly efficient feeds under test.

It's a matter of condensing into minutes some exacting calculations which could conceivably take years under usual methods.

### Provide a Benchmark

Dr. Rollin H. Thayer, poultry nutrition professor, is in charge of the research at the Stillwater, Okla., university. He and his associates don't claim they have all the answers to the design of rations that will yield a pound of market turkey on 2 lb. of feed under commercial conditions. But they do feel their experimental feeds and results provide a benchmark from which they can reach out in different directions.

Their use of the computer also provides an indication of a technique which may find more application in the feed industry as manufacturers seek more accurate and faster answers in formulating or reformulating today's complex feeds at the least possible cost.

Some large feed companies have been using computers in their regular formulation and pricing of feeds. The machines calculate ingredient combinations that will provide, most economically, specified amounts of the various nutrients. Some universities also have used computers in their feed work.

However, most feed men are not yet familiar with use of computers for this purpose. Because of both this and the current nutrition research, the Oklahoma work is of special interest at this time.

Dr. Thayer and assistants Kenneth Dunkelgod and Earl Gleaves, for some time, have been studying protein and energy relationships and other factors in turkey rations. Late in 1957 (Feedstuffs, Nov. 23), they reported on some of this work, noting how turkeys had been grown to market weight on some 2 lb. of feed per pound of live weight.

The experimental rations contained high protein levels (up to 36%) and high energy levels (up to 30% fat). While the feeds—all-mash rations—were composed largely of standard ingredients, use of such things as dried egg solids, casein and biotin hiked costs to $23 to $30 cwt.

In addition to the cost problem, there were mixing difficulties with the addition of 30% of fat. In this connection, Dr. Thayer said a commercial concern is working on a new product, to be announced in a matter of months, that will make high-fat levels possible.

### Studying Protein Sources

As for cost, the job has been to find lower-cost protein sources that will substitute for casein and dried egg solids and still provide amino acid values found in the experimental ration which is used as a benchmark.

The first thing was to choose possible protein sources on the basis of cost, amino acid content and availability. Some are commonly used, some not. Dr. Thayer feels the studies are opening up new possibilities in ingredients.

For some time, Dr. Thayer said, design of a "Model T" ration, providing normal growth, has considered only the amino acids arginine, lysine, methionine, cystine and tryptophan. More recently, he said, better growth has been obtained by calculating for eight more—glycine, isoleucine, leu-

(Turn to FORMULATION, page 131)

SPACE-AGE FORMULA—Printed on the long sheet of paper held by Mr. Dunkelgod are data from a tabulator which is part of the electronic computing equipment. Among the hundreds of numbers on this sheet are figures which tell the amounts of various ingredients to use to get the one best feed formula based on information fed into the computer. Dr. Rollin Thayer (right) is pointing to one of the ingredient amounts. Mr. Gleaves is looking on.

THE PROOF IS IN THE EATING—After formulas are determined on the electronic brain, researchers still have to go to the birds to get the final answers. Dr. Rollin Thayer (right) and Kenneth Dunkelgod are weighing poults which have been fed rations calculated on the IBM 650 computer. Recording the weights is Shirley Wilkins, poultry science department secretary.

# A Simple Example of Linear Programming with 2 Ingredients

The procedure used in working out feed formulas and other problems with an electronic computer is called linear programming.

To help explain the technique, Dr. John Hamblen, director of the computing center at Oklahoma State University, has provided a simple example which involves only two ingredients, corn and soybean meal. This, he notes, will serve to give some insight into the method of linear programming since a graphical solution can be demonstrated.

Suppose, he says, we are interested in determining a mixed feed formula of at most 90 lb., using only corn and soybean meal, such that specified minimum requirements of two amino acids, amino acid No. 1 and amino acid No. 2, are satisfied, and that we want to find the cheapest formula which satisfies these conditions.

To further simplify the problem suppose that corn contains 0.5% amino acid No. 1 and 0.7% amino acid No. 2 and that soybean meal contains 3% amino acid No. 1 and 1% amino acid No. 2. Also, suppose that the price of corn is 2¢ lb. and that soybean meal is 5¢ lb. Assuming that the formula should contain at least 1.20 lb. of amino acid No. 1 and at least .7 lb. of amino acid No. 2, we can summarize the above information in the following table by letting X = the number of pounds of corn to be used and Y = the number of pounds of soybean meal to be used.

| Ingredient | Factors Considered: No. lbs. amino No. 1 | No. lbs. amino No. 2 | No. lbs. ingredient | Cost (cents) |
|---|---|---|---|---|
| Corn | .005X | .007X | X | 2Y |
| Soybean Meal | .030Y | .010Y | Y | 5Y |
| Mixed Feed Formula | 1.200 (at least) | .700 (at least) | 90 (at most) | 2X + 5Y (total cost) |

The information in the above table may also be expressed in the following set of linear inequalities:

$.005X + .030Y \geq 1.200$ ($\geq$ is read "greater than or equal to", or "at least.")

$.007X + .010Y \geq .700$

$X + Y \leq 90$ ($\leq$ is read "less than or equal to", or "at most.")

$X \geq 0$

$Y \geq 0$ (These restrictions rule out negative amounts of ingredients)

Or, if we multiply both sides of the first two inequalities by 1,000, we have:

$5X + 30Y \geq 1200$

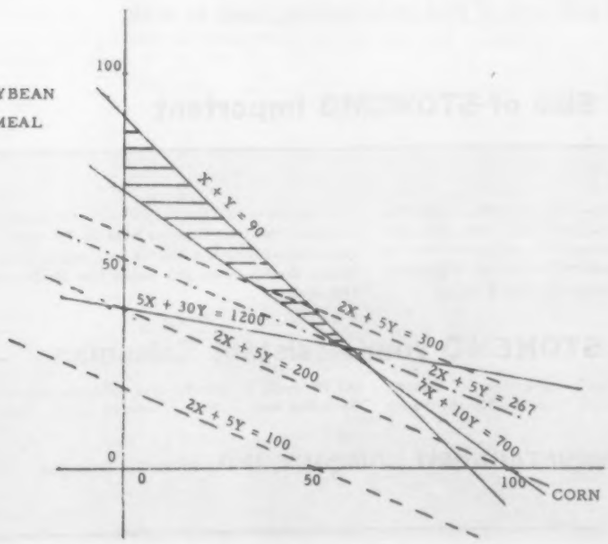
$7X + 10Y \geq 700$

$X + Y \leq 90$

$X \geq 0$

$Y \geq 0$

A composite graph of these restrictions shows that there are many, many pairs of (X, Y)—values (shaded area) which satisfy these restrictions. However, we want that combination(s) which is the cheapest based on our "cost function" 2X + 5Y. The dashed lines on the graph represent all "formulas" at a fixed cost. (It is to be noted that these lines are parallel.) Lines are shown for formulas which would cost $1, $2, $2.67 and $3. Note that only the latter two have any points in common with the shaded area (combinations which satisfy the restrictions imposed) and furthermore, no other line 2X + 5Y = C, where C is less than 267, will have any point in common with the shaded area. Consequently, we should use approximately 56 lb. of corn and 31 lb. of soybean meal, which will give us 87 lb. of "formula" (note that this is less than 90) containing .005 (56) + .030 (31) = 1.210 lb. of amino acid No. 1 and .007 (56) + .010 (31) = .702 lb. of amino acid No. 2 at a cost of 2 (56) + 5 (31) = 267 cents. (More exact calculations give a formula of 89.4 lb., consisting of 58.8 lb. of corn and 30.6 lb. of soybean meal at a cost of 270.6 cents).




GRAPHICAL SOLUTION
of
TWO INGREDIENT EXAMPLE

It is obvious that if we want to consider many ingredients with many restrictions the above approach is impossible. Fortunately mathematicians have developed methods for handling such a problem. The calculations can be done on a desk calculator but are very laborious. The high speed, stored program, electronic computer has made these methods more available to those who need them.

**POULTRY HOUSE—This 40-pen house on the OSU poultry farm is used to grow turkeys to maturity, on the floor, in experiments with new high-efficiency rations. The floor trials follow tests with poults in batteries.**

# Industry Is Moving Toward Greater Use of Computers

One businessman said recently that any company not actively planning for electronic data processing may be out of business in 10 years. He said that such a company will not survive against competitors who use electronic computers or computing services.

That may or may not be the case with all feed manufacturers of all sizes, but it is apparent that business in general, and some in the feed business, have been moving toward greater use of electronic brains in their operations—devices that can perform thousands of arithmetical calculations in a matter of minutes.

In the feed industry, one of the principal uses of computers is or will be in formulating or reformulating feeds periodically to arrive most quickly and easily at a formula which will satisfy specified nutrient requirements at the lowest possible ingredient costs under prescribed conditions. Another use is in quick determination of feed ingredient costs for all feed formulas on a weekly basis, as a guide in pricing feeds.

Dr. John Hamblen, mathematics professor who is director of the computing center at Oklahoma State University in Stillwater, recently told something of the use of the university's IBM 650 computer. He noted that most universities (as well as many companies) now have or use electronic computers in various ways in research, instruction and work with persons or agencies off as well as on the campus.

He explained that the computers make use of a technique called linear programming (a simplified example of which is given in an accompanying story). This involves what is called a solution of linear inequalities.

**Normal Feed Problem**

In a normal feed problem, he explained, one would be working with such things as these in using a computer:

1. A list of ingredients to be used in making up a particular feed.

2. Data on the nutritional values of these ingredients, such as amounts of protein (or amino acids), fat, fiber, minerals, vitamins and energy in an ingredient.

3. Minimum requirements for these nutrients in a given feed (and perhaps in some cases specifications of maximums).

4. Unit costs of ingredients, such as so many cents or dollars per cwt.

5. Total amount of ingredients to be used, such as a total unit of a ton.

6. Limitations on ingredients, such as not more than or not less than certain amounts of some, or a specified range, or a specified single amount. For example, it might be specified that no less than 200 lb. of an ingredient would be used for reasons of its amino acid content, or because of a color factor, etc. Or, one might specify that so

(Turn to COMPUTERS, page 32)

## IBM Unit to Offer Formula Computing Service for Feed Mills

MINNEAPOLIS—A new feed formula computing service, using electronic computers, was announced this week by The Service Bureau Corp., a subsidiary of International Business Machines.

The new service will make it possible for feed manufacturers to submit nutrition and ingredient cost data and then have formulas calculated which will provide specified nutrients on a least-cost basis.

The computing will be done on IBM electronic computers in Service Bureau offices throughout the country.

Initial work in developing the service on a broad basis has been done in the Minneapolis office of the firm. Company headquarters are in New York, and there are 82 branch offices.

"First results with a number of feed firms in the Minneapolis area indicate a high degree of success," said Jack Shanley, manager of sales in the Minneapolis office of SBC.

A few large companies now lease computers on a full-time basis and use them for, among other things, reformulating feeds periodically to arrive quickly at a formula which satisfies specified nutrient requirements at the lowest possible ingredient costs.

"The new service," Mr. Shanley said, "will now make it possible and economically feasible for all feed manufacturers, large or small, to have the same sort of work done for them on an hourly fee basis by SBC and its computers. This service will be

(Continued on page 32)

# THEIR FIRST MOUTHFUL

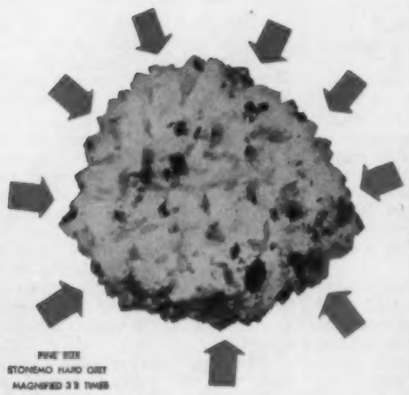
## TELL 'EM AND SELL 'EM THIS FEEDING PROGRAM

Chicks are apt to have fewer intestinal disorders when the profit-tested Stonemo Feeding Program is followed.

By starting them right with "teeth" of granite grit, chicks will grind up the cracked grain and mash and rid their gizzards of litter. Chicks will get off to a better start – the kind of start that helps build strong gizzards, big sturdy bodies, and more profitable birds.

So when you sell the first feed, sell Fine (Chick Size) Stonemo, too. Stonemo will help reduce intestinal disorders, and put more of that body-building mash to work.

### Size of STONEMO Important



FINE SIZE STONEMO HARD GRIT MAGNIFIED 3 9 TIMES

To the right is pictured Stonemo's Research Farm. Here the proper size grit for each age of bird is tested. Exhaustive studies prove that your poultry growers will get the most from the feed you sell by following these feeding directions for Stonemo:

- Fine (Chick Size) Stonemo for the first 3 weeks
- Medium (Growing Size) Stonemo for the second 3 weeks
- Coarse (Hen Size) Stonemo from the 7th week on

These recommendations are for both pullets and broilers. Turkeys develop better with Turkey Size Stonemo after the 10th week.

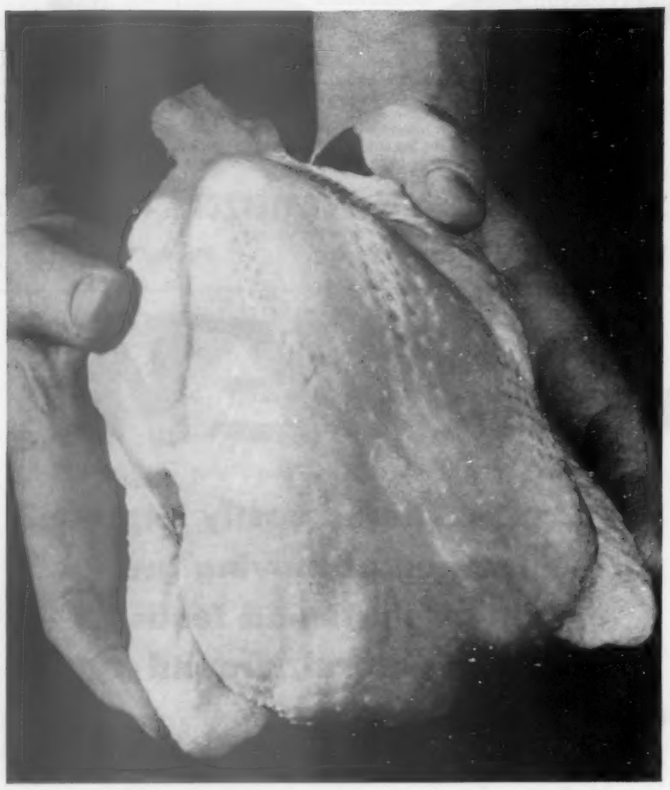
### Make STONEMO your Assistant Salesman

Whenever you sell feed for pullets or broilers, sell Stonemo with it. Point out how changing to larger size Stonemo the 4th and 7th weeks will increase feed efficiency, step up profits. For further data on Stonemo research results, write:

**STONE MOUNTAIN GRIT COMPANY, INC., Lithonia, Georgia**

# STONEMO GRANITE GRIT

# SHOULD BE STONEMO



## More Eggs From Better Grinding

How many extra eggs your customers get doesn't depend alone on a bird's inherited capacity and the feed formulation. Many times it also depends on how thoroughly and efficiently the birds grind and use their feed.

When Stonemo's extra grinding surfaces rip open the hard film that encases the fine particles of the feed, more of the nutrients are exposed to the digestive acids for better assimilation.

In the latest work of Iowa State, up to 10% more eggs were produced from the same feed when Stonemo was offered free choice, and with better feed conversion.

It's not enough just to sell Stonemo. Sell the Stonemo Feeding Program. Then you will be selling the right size chicken's "teeth" for those extra eggs.

## Extra Meat From Better Grinding

If you have broiler customers who are having a hard time making a profit, here is a tip you and they will appreciate. For faster feed conversion into heavier meat – broilers need gizzard teeth that are hard, sharp-cutting, quick-grinding and the proper size.

*Recommend Stonemo according to feeding recommendations, and your customers will find:*

- **1st. Birds will rid their gizzards of litter, fiber and feathers — make room for more meat-producing feed.**
- **2nd. Less feed will be used to produce a pound of meat, even on an all-mash feeding program.**
- **3rd. Birds get to market quicker — your customers start the next lot of broilers earlier — save time and money.**

In a series of feeding tests with broilers at our research farm, even when an all-mash diet was used, birds were heavier, feed conversion was better, profits increased nearly ½ cent per pound against no grit — $16.85 per thousand birds.

## The Grit with the "EXTRA GRINDING SURFACES"

# ANIMAL FAT IN DRY FORM FOR YOUR FEED MIXING

HOMINY FEED • KIBBLED CORN

STANDARD *Fat Enriched* INGREDIENTS

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Your formulas can now include stabilized animal fats. STANDARD *Fat-Enriched* Ingredients are a scientific blend of high quality animal fats on a dry carrier with a safe, proved anti-oxidant which stabilizes fat and protects fat-soluble vitamins in the feed.
They are economical, too, as expensive handling of liquid tallow and grease is avoided. Both packed in 100 lb. burlap bags for prompt shipment, in carlots, truck lots or split cars. Write or phone STANDARD for today's prices and samples.

**STANDARD FEED & FERTILIZER, INC.**
Affiliate of Milbrew Inc
3456 North Buffum St., Milwaukee 12, Wisconsin EDgewood 2-6204


available through any of SBC's 82 branches."

The aim of the service, Mr. Shanley said, is to provide more rapid and accurate recalculation of formulas. A series of alternative formulas will result from each calculation, and each successive formula will have a lower cost than that preceding. The choice of which formula is used remains with the nutritionist or feed man.

He said that Service Bureau technicians have set up basic programs for computer use which are applied to feed formulation. The company will reevaluate formulas initially, and then as ingredient costs change significantly, feed manufacturers can have their feeds reformulated by the computer, eliminating manual calculations. They do this by submitting information on such things as ingredient costs, nutrient requirements and the nutrient content of ingredients. Service Bureau will feed the data into computers and quickly come up with new least-cost formulas, Mr. Shanley said.

Another service is quick determination of feed ingredient costs for all of a company's formulas on a weekly basis, as a guide in pricing feeds. Feed companies turn in ingredient price changes, and then the computer determines costs based on the formulas already at hand, in code, in the computing center. Present customers receive completely costed formulas in three hours' time.

Mr. Shanley noted that Service Bureau will not offer nutrition guidance. The service will consist only of computing, using data supplied by individual feed companies. Each feed firm will provide its own data, and no firm will have access to another's formulas or data.

Among the first feed manufacturers in the Minneapolis area planning to use the formula computing service is Doughboy Industries, Inc., New Richmond, Wis.

With the first feeds reformulated for one of the firms doing initial work with Service Bureau, there was a significant reduction in costs from the previous formulas, Mr. Shanley said.

## COMPUTERS

(Continued from page 29)

much of an ingredient will be used because it is a source of unidentified factors.

All of this information is punched on cards and fed into a computer, along with instructions. The answer is the proper combination of ingredients that will satisfy specified requirements at the lowest possible ingredient cost. In doing this, the computer may consider hundreds and thousands of possible combinations and then come out with the one lowest cost formula, doing in minutes, and more accurately, what might take countless hours by hand calculations.

Generally, the problem concerns primarily the principal ingredients in a feed and their variations in prices. The aims to get the right combination of these ingredients, such as protein and carbohydrate sources, to satisfy nutrient needs at the least cost.

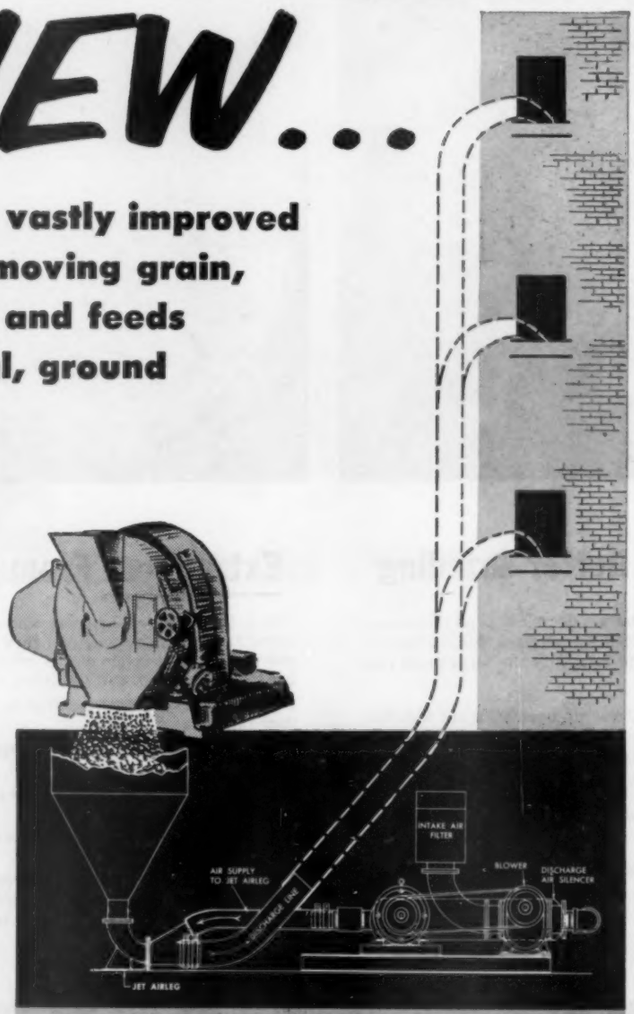
### Turkey Work

In the problem with the turkey rations at Oklahoma State University (described in the accompanying article), Dr. Hamblen and poultry nutritionist Dr. Rollin Thayer were working with nutrient values, and costs were not directly involved in the computer calculations. The idea was to determine formulas for the protein concentrate part of an experimental ration which would meet specified amino acid levels.

In this there were 18 "restrictions" on amino acids; that is, for 18 amino acids, it was specified that the formula should contain certain minimum percentages of each. There also were six restrictions for various ingredients; six ingredients were arbitrarily used at certain levels to provide


# THIS IS NEW...

**...and a vastly improved method of moving grain, grain products and feeds whether in natural, ground or pelletized form.**

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- NO vacuum cyclones or rotary valves to damage materials.
- NO long suction lines to become plugged.
- NO moving parts in conveying line.
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- High lift and long carry over any reasonable distances.
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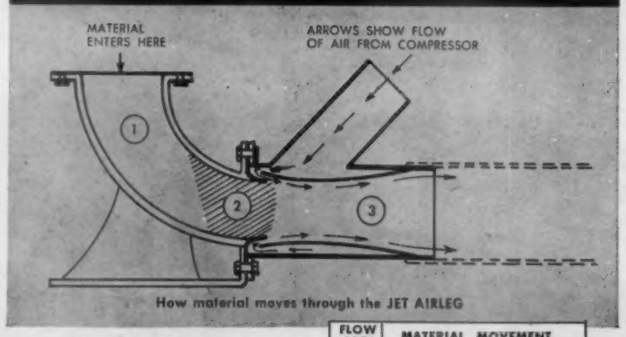
Regardless of how you are now moving grains, you should get the facts on this new, trouble-free method of materials handling.
Write today for complete details—no obligation. If you have a special problem, describe it and let a Robinson engineer solve it.




How material moves through the JET AIRLEG

| FLOW AREA | MATERIAL MOVEMENT |
|---|---|
| 1 | Pulled down by gravity |
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Works published in 1956 and 1957:

- ☐ A Comparative Study of the *d* and *dl* Forms of Alpha-Tocopherol and Alpha-Tocopherol Acetate in the Chick. Presented at 1957 Poultry Science Association Meeting at University of Missouri.
- ☐ Studies on the Nutrition of Breeding Turkeys, *Poultry Science:* Vol. XXXV, No. 4, July, 1956.
- ☐ Turkey Hatchability. Texas Field Service Report, No. 4, June, 1957.
- ☐ Vitamin E (Alpha-Tocopherol) in Poultry Nutrition. Research Laboratories, Distillation Products Industries.
- ☐ Vitamin E in the Nutrition of Furbearers and Pets. Research Laboratories, Distillation Products Industries.
- ☐ A Study of the Breeding and Racing of Thoroughbred Horses Given Large Doses of Alpha-Tocopherol. The National Stud Farm, Oshawa, Canada, and Windfields Farm, Toronto, Canada.
- ☐ A Progress Report on Vitamin E, *Feed Age:* July, 1957.
- ☐ Interrelationships of Vitamin E with Selenium and Other Nutrients, *Eastern Feed Merchant:* December, 1957.

Works published prior to 1956:

- ☐ Annotated Bibliography of Vitamin E in Swine Nutrition, 1927 to 1954. Research Laboratories, Distillation Products Industries.
- ☐ Annotated Bibliography of Vitamin E in Chicken Nutrition, 1929 to 1954. Research Laboratories, Distillation Products Industries.
- ☐ Annotated Bibliography of Vitamin E in the Nutrition of Turkeys, Ducks, and Pheasants, 1934 to 1955. Research Laboratories, Distillation Products Industries.
- ☐ Vitamin E and Reproduction in Turkeys, *The Journal of Nutrition, 55* (3), 387-97 (1955).
- ☐ Interrelationship Between Vitamin E and Phosphorus in Preventing Perosis in Turkeys, *The Journal of Nutrition, 52* (3), 395-403 (1954).
- ☐ Prevention of Enlarged Hock Disorder in Turkeys with Niacin and Vitamin E, *Poultry Science, 32* (4), 670-77 (1953).
- ☐ Studies on Vitamin E in Poultry Nutrition, *The Journal of Nutrition, 56* (3), 387-402 (1955).
- ☐ Ten-Year Incidence of Field Encephalomalacia in Chicks and Observations on its Pathology, Annals of the New York Academy of Sciences, *52* (3), 104-12 (1949).
- ☐ Information on Myvamix Vitamin E Feed Supplement.

unidentified factors and other nutrients. Another restriction was the total poundage of the concentrate was to be a certain amount. The total amount of protein also was specified. Then certain ingredients and their amino acid values were given. The computer's job was to find combinations of these variable ingredients (along with the "restricted" ingredients) to provide certain minimum amounts of each of 18 amino acids and to do so with minimum total protein.

In this particular case, data on vitamins, minerals and energy were hand calculated and these nutrients were largely provided for in the remainder of the ration—the part not in the protein concentrate under study.

Economic considerations were not directly involved in this particular computer problem, but they could have been. Prices of the ingredients could have been used as part of the data; and then through these additional figures and instructions to the machine, one could also find the lowest cost combination that would meet the requirements.

### Other Uses

In addition to such things as feed formulation and pricing, there are many other uses for computers. Some companies use them in handling sales, inventory, production, and distribution problems.

An example given by Dr. Hamblen is a transportation or distribution problem. One might have:

1. A certain number of origins of products, such as warehouses.
2. A certain number of destinations, such as distribution points.
3. Information on costs of shipping from each origin to each destination.
4. The amount of stock available at each origin.
5. The amount of stock required at each destination.

The problem then would be to find the amount of stock to be shipped from each origin to each destination at the minimum total cost.

The equipment at Oklahoma State University includes the IBM 650 magnetic drum digital computer. The rotating drum "stores" electronically hundreds of numbers, including data and instructions, which are fed into it from punched cards. Answers are arrived at which come out on cards, and these cards go into a printer which prints up the calculations and answers.

In addition to the computer itself, there is other equipment—for example, for punching cards, for sorting, for interpreting, reproducing and collating.

The approximate purchase price of all machines at the university is $350,000. The approximate monthly rental is $8,000.

For using the computer, the charge is $70 per hour of machine time on the basic 650. Now, because of more facilities, the rate for the university equipment is $100 an hour. Once a program or procedure is set up, solving a problem is a matter of minutes and not hours.

Given the data and instructions, the computer handles most problems very quickly. For the complex amino acid problem with the turkey rations, the longest time on the computer was 20 or 25 minutes.

The chief job in using these computers is setting up the program and/or system to be used. Fortunately there are several programs available for the IBM 650 which will carry out the numerous calculations involved in obtaining a solution to a linear programming problem. Hence the nutritionist need only supply his specifications in order to arrive at a solution, such as a "least-cost" formula.

Once a program has been set up, as for feed formulation, it is simply a matter of changing data to handle a new problem which may arise because of significant ingredient cost changes. This can be done very quickly and does not involve new figuring or design of a new system.

## Speakers Named for Southeastern School

RALEIGH, N.C. — Techniques designed to help keep egg quality in the Southeast apace with the area's growing importance in egg production will be taught to egg industrymen at the third annual Egg Quality & Grading School June 23-27 at North Carolina State College.

The Southeastern Poultry & Egg Assn. has confirmed four program speakers, according to a recent announcement. The four are Dr. G. O. Hall, Orlando, Fla.; Paul H. Margolf, poultry husbandry department, Pennsylvania State University; Lester Kilpatrick, poultry division, U.S. Department of Agriculture, and Walter A. Tuten, Clemson College extension marketing specialist.

Named as the supervisory staff of the school are R. J. Park, supervisor of the poultry and egg program for the Tennessee Department of Agriculture; C. E. Boggs, chief of the egg section, Georgia Department of Agriculture; Guyton Williams, poultry products section, Florida state marketing bureau, and Dr. E. W. Glazener, department of poultry science, North Carolina State College.

Enrollment is beng handled by the Southeastern Poultry & Egg Assn. office at 235 E. Ponce de Leon Ave., Decatur, Ga.

## Reaction to Fowl Pox Vaccine Said 'Reduced'

VINELAND, N.J.—A new method of producing fowl pox has eliminated the possibility of more than a mild reaction from use of the drug, according to researchers at Vineland Poultry Laboratories.

They say that the vaccine (Vipol) brings positive protection to broilers vaccinated with the stick method between day-old and 10 days old, and to layers for the entire laying year when administered at any time from 10 days to the beginning of laying. The immunizing quality of the product is said to be not affected.

A spokesman for the firm said all Vipol vaccine now being marketed and in dealers' stocks is the result of the new production method.


If you're in the feed mixing business or plan to take advantage of the growing demand for feeds mixed near the farm...here's the program that provides you with QUALITY CONTROLLED basic mixes and formulas to mix quality feeds for livestock and poultry...price it competitively to build volume sales at a profit to you—

ALBERS LAB-MIX

FOR POULTRY, LAYERS, SWINE AND RUMINANTS

Regardless of the kind of feed you sell, you know there's a close relationship between quality, price and feeding results that always has a bearing on the profit you make...month in... month out...over the year.

Today, the dealer who mixes feed has a definite advantage. The dealer who follows Albers Lab-Mix Program has a maximum of advantages.

**QUALITY**

Albers Lab-Mix is the basic mix for all the famous Albers Feeds and is backed by 50 years of experience in the field of animal nutrition and feed formulation.

Lab-Mix comes in four basic premixes: Lab-Mix for poultry, layers, swine and ruminants. Each is "Quality Controlled" for uniformity and to provide for the specific nutritional requirements of the animals or poultry for which it is mixed. Feeders know it provides Albers *quality*.

**FEEDING RESULTS**

In any feeding operation, Albers Lab-Mix feeds provide excellent results. That's why it is wise for every dealer to consider the Lab-Mix Program. Satisfied feeders come back, again and again, for feeds that help them make the most from their feeding operations.

**PRICE**

When you follow the Lab-Mix Program, you have the advantage of buying all of your quality controlled premixes from one manufacturer... Albers. You earn quantity discounts you can pass along to feeders. Too, it takes so little Lab-Mix to formulate feeds using local ingredients to fit local conditions, and to meet the individual needs of feed customers. This means your inventories can be kept low. Add all these advantages and the Lab-Mix dealer can price the feeds he mixes competitively and still make a nice profit.

**STILL MORE TO GAIN**

Other dealer advantages of Albers Lab-Mix Program include: Proved formulas from Albers Research; farm-tested feeding programs; mixing and feeding guides; personalized advertising and promotion assistance; convenient sources of supply of Lab-Mix to save on transportation costs; and consultant service for tags, registration and manufacturing.

**CALF MANNA AND SUCKLE**

More and more dealers are selling Albers Calf Manna and Suckle for extra profits along with their Lab-Mix feeds. Calf Manna is the ideal booster feed for all kinds of livestock and poultry and is first choice of many leading feeders of dairy cattle, beef, horses, sheep and hogs.

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Wisconsin call Irvin J. Collins, 914 9th Ave., S.E., Rochester, Minnesota, Phone: Atlas 9-7637. Call collect to any of these Lab-Mix Specialists. They'll be glad to help you solve your mixing, formula, and sales problems.

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W-W hammers, the original hard-surfaced hammers, have Tungsten Carbide cutting edges which last for entire life of the hammers — many times longer than any other hammer.

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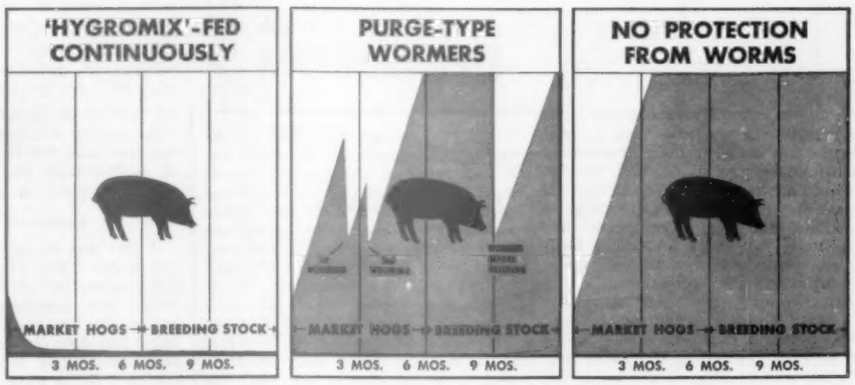
Lilly **REPORT TO THE FEED INDUSTRY**

# 'Hygromix'...fights swine worm problem full time

***Here's why feeds with 'Hygromix' provide continuous worm control for entire swine herds... how 'Hygromix' fights worm problem full time instead of only part time.***

by Eugene S. Hahnel

Scientists have long known that worms and disease are almost always closely associated. Worms, or their larvae, attack live tissue in many vital organs of the hog... heart, liver, kidney, lungs, intestines, stomach; even the blood stream. Like tiny knives, they damage tissue and open up spots for germs to get a foothold. Worms may even carry germs or viruses along with them, perhaps even serve as hosts for certain diseases.


'HYGROMIX'-FED CONTINUOUSLY
MARKET HOGS → BREEDING STOCK
3 MOS. 6 MOS. 9 MOS.
PURGE-TYPE WORMERS
MARKET HOGS → BREEDING STOCK
3 MOS. 6 MOS. 9 MOS.
NO PROTECTION FROM WORMS
MARKET HOGS → BREEDING STOCK
3 MOS. 6 MOS. 9 MOS.

The blue areas in these charts represent herd infestation of roundworms, nodular worms and whipworms. As we face the continuous swine worm problem, we have three choices. We can do nothing about it... and take our losses. We can use purge-type wormers one or more times for temporary relief. Or we can use 'Hygromix'-fortified feeds continuously for all hogs. These charts show the kind of worm protection we can expect under each swine-management system. The blue area shows the estimated population of these worms (with resultant worm-egg production and tissue damage) for each system. White space shows freedom from these three worms.

**'Hygromix' protects herd health continuously.** Worms and their damage or side-effects are one of the main causes for swine herds that don't do as well as they could. Until 'Hygromix,' the best we could do was to purge our hogs of one or two types of worms... once or twice between weaning and market. But much of the damage to live tissue and vital organs was already done ... and worms started to multiply again immediately after treatment. (See "Purge-Type Wormers" chart, above center.) Continuous use of 'Hygromix' feeds keeps damage from happening... protects herd health continuously. (See "Hygromix-fed Continuously" chart, above left.)

**You get dividends now and later.** By offering your swine feeds with 'Hygromix' for *all* hogs, *all* the time, your customers can prevent worm damage, worm side-effects and losses before they begin, and keep them under control—instead of trying to cure the problem too late. By controlling worms you can expect your swine feeds to produce a higher level of herd health, fewer poor-doing or stunted pigs, and improved feed efficiency. Farms where your 'Hygromix'-fortified feeds are used can expect rapidly to become practically free of millions of worm eggs from three of the most costly and damaging worms which commonly infest swine (large roundworm, nodular worm, whipworm). New generations of pigs need no longer be caught up in the cycle of life-long damage by these internal parasites.

**HYGROMIX**

(*S. hygroscopicus* Fermentation Products, Lilly)

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MAKERS OF **Stilbosol** (Diethylstilbestrol Premix, Lilly)

ELI LILLY AND COMPANY, AGRICULTURAL AND INDUSTRIAL PRODUCTS DIVISION, INDIANAPOLIS 6, INDIANA

# PELLETING RATIONS FOR BEEF CATTLE AND SHEEP

**Pelleted complete rations fed automatically are the new look in beef cattle and sheep feeding. A large tonnage of these rations will be fed in the future. Someone is going to provide the ration.**

**By Prof. R. J. Webb**
**University of Illinois**

R. J. Webb

Pelleted complete rations fed automatically are the new look in beef cattle and sheep feeding. The use of self-unloading wagons and trucks, front end loaders, self feeders, feed bunk augers and belts, and automatic grinding and mixing equipment has put most beef cattle and sheep feeding operations in some stage of mechanization and automation. Complete rations have been a natural to fit into these mechanized set-ups. Pelleting this complete ration has in most cases increased the meat producing ability and efficiency of the operation.

Research studies at a number of experiment stations and observations at feeding operations in numerous feed lots have provided factual information to evaluate pelleting of beef cattle and sheep rations.

### Illinois Trials

A first cutting timothy-alfalfa hay mixture was self fed as hay pellets, baled hay and chopped hay to three lots of 15 steer calves each at the University of Illinois, Dixon Springs Station, for 119 days in the winter of 1955-56. Calves fed hay pellets gained an average of 1.73 lb. per day, while .63 lb. and .62 lb. per day gain was made on the calves fed baled hay and chopped hay, respectively. Hay pellets were consumed at the rate of 15.7 lb. per day while 11 lb. baled hay and 10.7 lb. chopped hay were eaten. Thus, much of the difference in performance can be attributed to the 43% increase in consumption of the hay pellets. Only 906 lb. of hay in the pelleted form were required to produce 100 lb. of gain, but 1,732 lb. of baled hay and 1,722 lb. of chopped hay were required per 100 lb. of steer. Each ton of hay produced 221 lb. of gain when fed as pellets, 115 lb. as baled hay and 116 lb. as chopped hay. With baled and chopped hay at $20 per ton, the cost per cwt. of gain was $17.32 and $17.22; allowing $10 per ton for grinding and pelleting the hay, or a total cost of $30 per ton, the feed cost per cwt. of gain was $13.59 when the hay pellets were fed.

*EDITOR'S NOTE: One of the major developments in livestock nutrition research and feeding operations has been in pelleting roughages and complete rations for beef cattle and sheep—a development which can have widespread effects in the feed industry. A leader in the research in this field has been Prof. R. J. Webb, superintendent of the University of Illinois' Dixon Springs Experiment Station, Robbs, Ill. Prof. Webb was graduated from the University of Illinois in 1937 and has been on the staff since that time. His graduate work was in meats and nutrition. He became superintendent of the Dixon Springs Station in 1940, in the early days of the station. He is professor of agricultural research and extension. In the accompanying article, Prof. Webb outlines Dixon Springs and other work on pelleting roughages and complete rations. He points out some of the advantages of this practice and offers suggestions which will be of interest to researchers, feed men, equipment manufacturers and others.*

Similar results were obtained the following winter when a ton of alfalfa hay pellets produced 253 lb. of steer calf, timothy-alfalfa 206 lb. and baled hay less than 100 lb. Again the level of daily intake accounted for most of the difference in performance.

### California Test

A test was conducted at the Imperial Valley Field Station, El Centro, Cal., during the winter of 1956-57 in which high quality alfalfa hay was fed to yearling steers as pellets and baled hay free choice along with approximately 2 lb. barley and 2 lb. of oat hay. Gains were 2.17 lb. per day in the hay pellet lot and 1.80 lb. in the baled hay lot. Three more pounds of hay were consumed per day as pellets than as baled hay. Little difference was noted in efficiency of feed utilization.

Results of these and other tests with hay pellets suggest the advisability of taking another look at the potentials of hay as a beef producing feed. Pelleting hay increases the density 3 to 5 times compared to other forms as baled, chopped and long. Thus the advantages in storing, shipping, handling and feeding become obvious.

### Complete Rations

Feeding one complete ration to beef cattle and sheep has been practiced in some commercial feed lots for several years and has been gaining rapidly in popularity in recent years in smaller feed lots. Some increase in feed utilization has been noted but the most advantage has been in increased efficiency in handling and feeding. Complete ration feeding permits exact control of the various ingredient intakes of the steer or lamb and makes self feeding a very safe and sound practice. Overeating, founder and many other digestive disturbances can be practically eliminated.

Pelleting the complete ration has shown some further advantages. A test was conducted at the Dixon Springs Station, Robbs, Ill., in the winter of 1954-55 in which a complete ration of 65% ground ear corn, 5% molass, 10% soybean meal and 20% ground hay was fed as pellets and as a meal to yearling steers for 130 days. Steers on the pelleted ration gained 2.75 lb. per day, compared to 2.58 lb. on the meal ration. The pellet-fed steers required 14% less feed per hundredweight of gain than those getting the meal ration, 729 to 845. On the basis of performance the pelleted ration was worth $6.39 more per ton than the meal ration.

### Other Studies

Kansas workers report that feed efficiency was significantly improved by pelleting a complete ration for beef heifers. Stanford Research Institute, California, reports a 15.4% improvement in feed efficiency on a pelleted high-roughage (64%) ration and 13% improvement in efficiency on a high-concentrate (60%) ration in fattening steers. There were no significant differences in average daily gains. Workers at Washington report a 20% increase in feed efficiency for a pelleted ration compared to non-pelleted ration for beef heifers.

A 153-day feeding test at the Dixon Springs Station comparing pelleted complete rations with concentrate-roughage ratios of 75-25, 65-35 and 55-45 showed no significant differences in average daily gains when fed to fattening yearling steers. Only 7% more feed was required in the 65-35 ratio and 14% more in the 55-45 ratio to put on 100 lb. of gain compared to the 75-25 ratio. This test points out the potential of using greater amounts of roughage in fattening rations when the complete ration is pelleted.

### Lamb Feeding

Pelleted complete rations fit well into lamb feeding programs. Control of the concentrate-roughage ratio, acceptability, adaptability to self feeding, minimum wastage, more rapid finishing, better feed conversion, increased intake and ease of ration

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handling are important factors that encourage lamb feeders to use pelleted complete rations.

Reports from Kansas and New Mexico indicate faster daily gains and less feed required to produce 100 lb. of gain when pelleted rations are compared with the same ration in other forms.

A lamb feeding trial in 1953 at the Dixon Springs Station compared three complete rations — dehydrated alfalfa meal and corn, fortified timothy and corn, and timothy and corn fed as meals and as pellets. No significant advantage was found by pelleting the alfalfa-corn ration, although average daily gains and feed conversion were slightly improved. In the fortified timothy-corn ration, daily gains were increased 32% and feed conversion improved 16% by pelleting. Pelleting improved daily gains in the timothy-corn ration 55% and feed conversion 25.5%. Daily gains were greater in both pelleted timothy-corn rations than in the alfalfa-corn ration. Increased feed intake accounted for most of this superior performance.

Wyoming reports 35-40% increase in rate of gain by pelleting; Missouri indicates increased feed efficiency; Michigan indicates less digestive disturbances and overeating disease.

### Advantages Listed

Results of controlled feeding trials and observations in feed lots have shown some real advantages for pelleting roughages and complete rations for beef cattle and sheep feeding. These advantages may be summarized as follows:

**1. Improved feed utilization.** This improvement will average around 10% in high concentrate rations and go as high as 50% in high-roughage rations. An average of 15-20% can be expected for many fattening rations.

**2. Increases rate of gain.** This factor affects feed utilization in most instances. Increases from 10% to 200% have been noted, again related to ratio of concentrate to roughage, with the greatest increase observed on all-roughage rations. Increased rate of gain shortens time required for finishing.

**3. Increases feed intake.** Acceptability of rations with poor physical qualities is greatly improved by pelleting, especially the lower quality roughages. Little increase in feed intake is observed in highly palatable grains and supplements.

**4. Complete control of ration.** Exact ratios of various ingredients can be maintained. Cattle and sheep can be started on self feeders immediately since concentrate-to-roughage can be controlled.

**5. Easier handling.** Pelleting reduces bulk of roughages, decreases dusting and makes complete mechanized movement of most feed possible.

Some disadvantages of pelleted complete rations could be listed. But since everyone has already listed these in his mind, let such suffice.

The advantages of pelleted complete rations present challenges to the feeder, researcher, feed industry and equipment manufacturers to provide means of accomplishing such ration feeding efficiently.

### Suggestions

These suggestions might be of some value:

1. Lower grade roughages have found a friend in pellets, and their potential should not be overlooked.

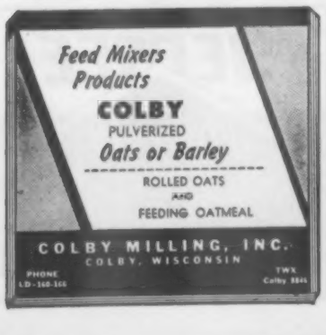
2. Pelleting is not expensive since it is a completely mechanized operation.

3. Preparing the complete ration in the meal form can be expensive, and along this line is where changes to greater efficiency must be made.

4. Changes in hay making methods seem important. From the handling standpoint, pelleting should be done as early as possible in the haying operation. Field pelleting machines, portable machines, or area located pelleting plants may be possibilities.

5. Pelleted complete rations for beef cattle and sheep cannot be bagged. Bulk handling must be continuous from the raw ingredients to the steer or lamb.

6. A large tonnage of pelleted complete rations is going to be fed to cattle and sheep. Someone is going to provide the ration.


If you're a Feed and Mineral manufacturer in the states

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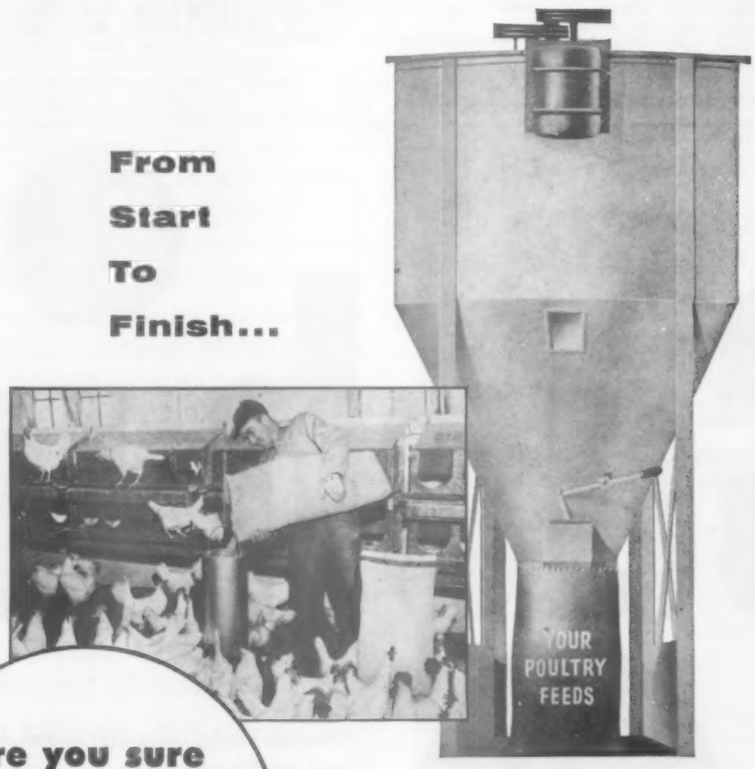


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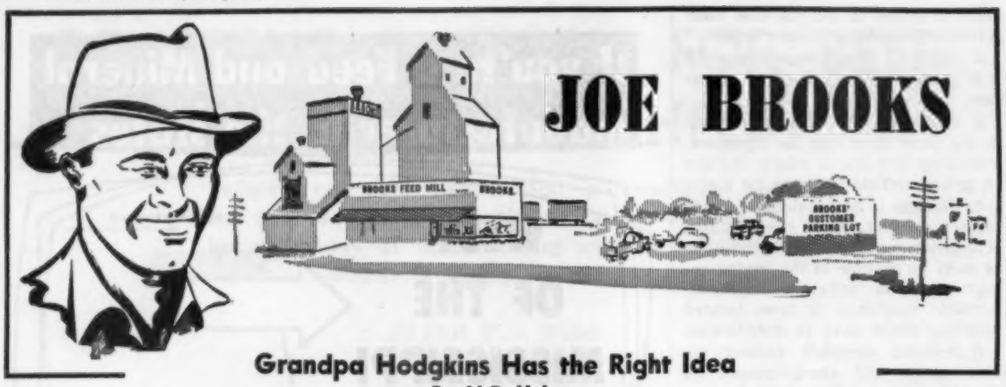


## Grandpa Hodgkins Has the Right Idea

**By Al P. Nelson**

There was always one day of the month when things were somehow different at Joe Brooks Feed Mill. That was the day that Grandpa Hodgkins, the fourth assistant honorary vice president, came to put in his one day a month, and at regular pay, too. Grandpa always showed up in a neatly pressed suit and with a carnation or some other flower in his buttonhole and he really turned on the charm.

Despite his rheumatism, he got up and down the aisles with alacrity, opening doors for customers, especially women, greeting them, asking about their families and chatting with them about rural doings. Customers liked Grandpa because he was so courteous, friendly and brave despite his age and infirmities.

**Grandpa Provides Inspiration**

"It's a tonic for all of us to have Grandpa around one day a month," Joe told Mary. "He's got drive, steam, enthusiasm and that old American spirit, 'we've got a job to do. Let's get busy and do it.' If he were 20 years younger I'd hate to have him as a competitor."

Mary laughed. "Lucky for you you hired him," she said. "He was winning all your contests."

"That's right," grinned Joe. "He has lost none of his sharpness with age. And how those old timers who sit around playing schafskopf in the back of the salesroom, how they love him and his sharp wit. Mary, I actually think a lot of farmers drop in at my store when they're in town just to watch those old fellows play cards. Farmers like to kibitz and listen to the card wisdom those old guys expound. And then the farmers usually buy something before they go home."

**The Democratic Way**

"I've noticed that," Mary said. "When you modernized your mill and salesroom, Joe, I was glad that you still reserved a place for farmers and old card players to gather and talk — cracker barrel style. That's democratic. That's American."

On this early spring morning as Grandpa Hodgkins approached the schafskopf players in Joe's showroom, he wore a frown. He stood around watching the players for a moment, saying nothing. Then Gabby Wilson, a paunchy, red faced retired farmer said, "Grandpa, did you eat too much grapefruit this morning? You look all soured up."

"I don't eat grapefruit," Grandpa said testily. "I drink sauerkraut juice."

"That accounts for it," replied Gabby. "It makes you sour."

"Huh," growled Grandpa Hodgkins. "It don't make me so sour that I'm as dumb as you fellows."

Gabby flushed, looked up, and so did his fellow players. "What do you mean, Grandpa?"

"Well, Joe is good enough to provide this place for you fellows to play cards all year long, isn't he?"

"Yeah, that's nice of Joe."

Grandpa frowned. "What other merchant in town would put up with us old fellows? What other merchant would let us have some free coffee, too, like customers, almost every day?"

"Yeah, Joe's a swell guy," replied Bill Gainsmith, a lean, whiskery fellow.

Grandpa's eyes narrowed. "Then why the heck are you fellows knockin' his business and drivin' his customers away?"

"Drivin' customers away?" echoed Gainsmith.

**An Admonishment**

"That's what I said. You guys ain't so busy every day you can't shave and put on a clean shirt and pants. And take a bath once in a while. Instead you come here lookin' like you been batchin' it in the woods for three weeks. Customers don't like to see anybody in a feed store that don't look neat and clean—employes, boss, or free loaders."

Gabby Wilson shoved back his chair and turned to face purplish faced Grandpa. "Who's a free loader?"

"You fellers, all of you!" exploded Grandpa. "The least you kin do is keep yourself neat and clean when you come in here. Remember how we had to play cards on platforms at the shoe factory outdoors before Joe let us come here. If I was Joe I'd throw the whole durn bunch of you out—unless you clean up."

"Now I know Grandpa drank too much sauerkraut juice," muttered Bill Gainsmith. "Nobody ever talked so nasty to me since my wife walked out on me twenty years ago. I don't like it."

Grandpa Hodgkins chewed on his gum. "Now that I unloaded one barrel on you fellers, I'll unload the other. Quit all this dern talk about hard times, and how a feller oughta

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The surest way to give dairy cattle on pasture enough salt and trace minerals is to mix added amounts of Sterling Supermix Blusalt in their feeds. In fact, many feed manufacturers now mix 40 pounds of Supermix Blusalt per ton of feed. Prepared expressly for feed mixing, Sterling Supermix Blusalt contains the now known correct amounts of manganese, iron, sulfate sulfur, copper, cobalt, iodine and zinc—blended with high-quality salt, the ideal natural carrier. An anti-separation agent assures uniform trace-mineral distribution in your feeds.

For complete descriptive material on Sterling Supermix Blusalt, plus a guaranteed analysis of this special feed-mixing salt, contact International Salt Co. There's a district office near you.

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## Want service with your salt?

**You can get it from International Salt Company's Animal Nutrition Department.** Located in Watkins Glen, New York, this department does continuing research into the proper use of salt and trace minerals in modern livestock and poultry feeding programs. This is *your department* to consult at any time for advice on your mixing or feed-formula problems, and for information on any of the Sterling Salt products. International Salt Co., Inc., Scranton, Pa.

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. . . that University of Wisconsin veterinary scientists report that in one excellent dairy herd, continuous low-level feeding of phenothiazine for worm control in growing heifers raised subsequent milk production by 10%, and annual fat production by an average of 50 pounds.

. . . that the number of milk cows was down 2% last year, for the 12th decrease in 13 years. Also down was the number of farms keeping milk cows. On the other hand, size of herd per farm continued up . . . and milk per cow reached a record 6,162 lbs. in '57—up more than 20% in 10 years!

If you're a Feed and Mineral manufacturer in the states

WEST OF THE MISSISSIPPI

See Page 57

squeeze a nickel three times before he spends it. To listen to you fellers one would think the world is goin' to pot right now. What are farmers gonna think when they stand watchin' you fellers play cards and gripin' like that? They'll think mebbe they'd better not buy so much from Joe."

Gabby Wilson looked up challengingly. "Well, it's the truth, ain't it? Times is tough."

**Long Range View Needed**

"You're still eatin, ain't you?" Grandpa growled. "At least that pot of yours don't look any smaller. Every one of you fellers is gettin' social security and pension checks. And I know some of you got money stashed away. What we need in this country is some fellers that got the long range view and not those that can't see over the edge of their noses. We need more fellers that got some 'git' in them like we had in the old days, and you fellers know it."

The card players looked at one another and there were many red faces.

"You fellers are eatin' and you've got it easy," Grandpa continued. "Now don't make it too tough for the rest that has to work. You know this is a good country, that we've allus come out of a panic, depression or recession or whatever you call it. And we're stronger when we come outa these things. Now cut out this hard times talk and be cheerful, or by golly, I'll—" he broke off. "Oh, there's a customer comin' in. I'll save some of your ballin' out for later."

## *Travel Agent Picked For World's Poultry Congress Sept. 21-28*

CHICAGO—An official transportation agent—Arnold Tours, 79 Newbury St., Boston—has been selected for the World's Poultry Congress in Mexico City Sept. 21-28, according to Joseph W. Kinghorne, Washington, tours committee chairman for the U.S. congress committee.

Dr. Reid A. Rawding, associated with Arnold Tours, who has handled travel arrangements for the last two congresses, has travel information about Mexico and will supply it to industry men on request.

An informative brieflet giving details about the congress and answering questions industrymen may have about the affair will soon be available. Copies may be obtained by writing H. H. Alp, American Farm Bureau Federation, Room 2300 Merchandise Mart, Chicago.

Mexico's National Auditorium will be the scene of both the educational sessions and commercial exhibits, according to Mr. Alp. He reported that Robert L. Hogue, Lafayette, Ind., newly-named coordinator for the American committee, will help expedite information on commercial exhibits and will help U.S. exhibitors with arrangements. More commercial than educational exhibits are anticipated.

Members of either the U.S. or World's Poultry Science Assn. are eligible to attend the congress. Industrymen wishing to attend the congress who are not members of these groups may attend by sending a $3 congress membership fee to M. C. Small, membership chairman, c/o National Turkey Federation, Mt. Morris, Ill. This fee entitles members and their wives full privileges at the congress.

## Central Soya Promotes William F. Kennedy

FT. WAYNE, IND.—The promotion of William F. Kennedy to a sales position in the special meal sales department of Central Soya Co., Inc., has been announced by B. A. Townsend, vice president.

A graduate of Villanova College, Mr. Kennedy joined the McMillen Feed Mills feed sales division in 1949 and was named territory manager of the New England states in 1952.

Mr. Gene Lane, Utility Operator, at the Central Soya Co., Inc., Chattanooga, Tenn. plant, operates 36 Merchen Scale Feeders that blend feed ingredients to 1% accuracy.

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Central Soya Co., Inc., blends millions of bags of animal and poultry feed a year at their new Chattanooga plant. Up to 50 different formula feeds are produced to exacting standards. Central Soya chose W&T Merchen Feeders because they give 1% minute-to-minute accuracy over a wide feed range. As seen in the picture, the feeders are compact—with no bulky enclosures.

Merchen Scale Feeders, with feed rates from 3 to 3000 pounds per minute, require no adjustment for changes in material density. They are suited for most industrial continuous blending or automatic batching processes. For more information about Merchen Scale Feeders, write for Bulletin M-35.

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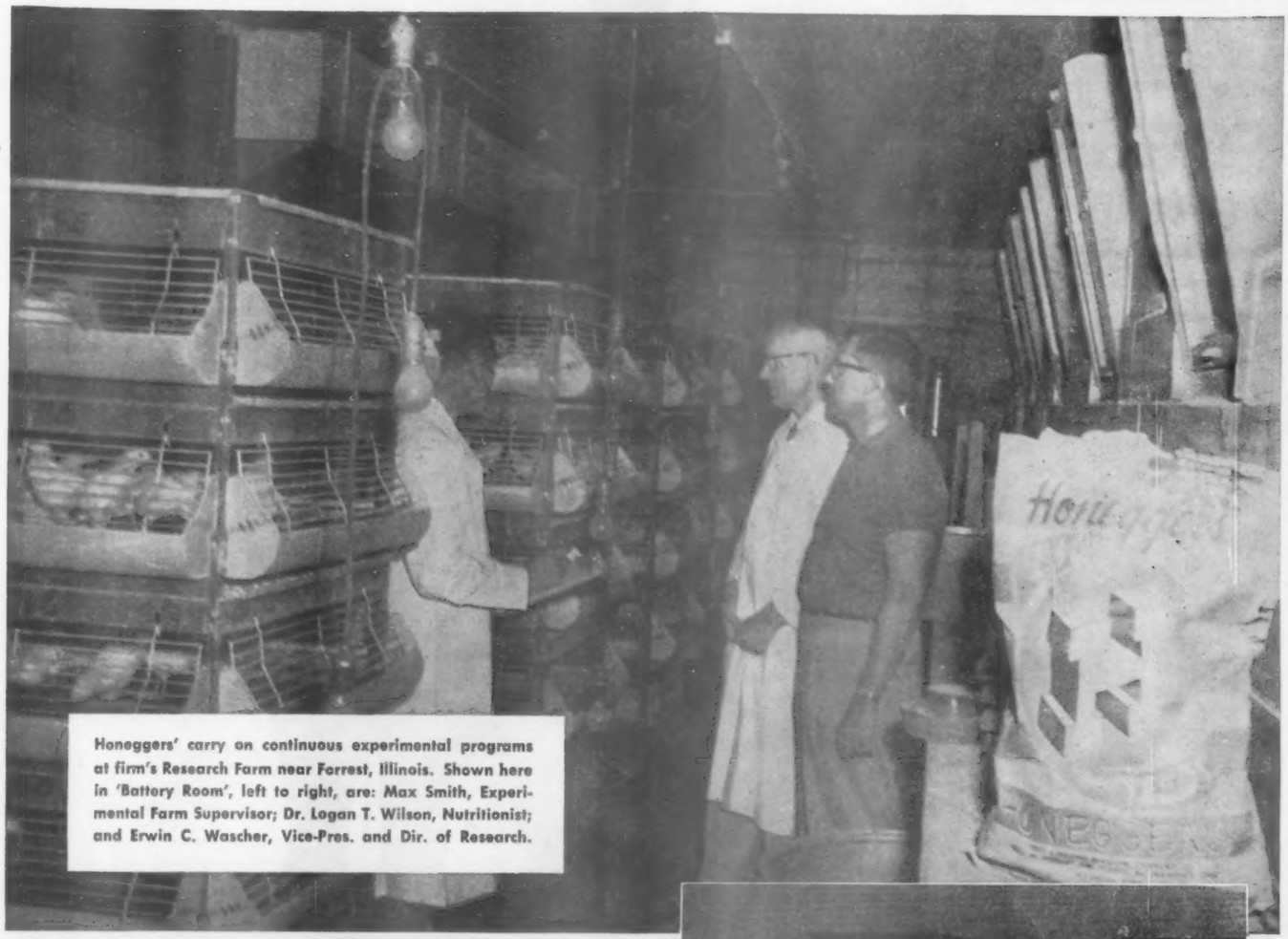

Honeggers' carry on continuous experimental programs at firm's Research Farm near Forrest, Illinois. Shown here in 'Battery Room', left to right, are: Max Smith, Experimental Farm Supervisor; Dr. Logan T. Wilson, Nutritionist; and Erwin C. Wascher, Vice-Pres. and Dir. of Research.

Honeggers', well-known feed manufacturer and operator of one of the nation's largest and most successful hatcheries, required only one thorough experiment to prove the extensive benefits of adding fat to their popular "Big H" feeds.

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Fat increases feed efficiency more than any other single ingredient. It provides 125% more energy value than pure carbohydrates or protein—and, in poultry feed, results in a better finish on the birds. Further, as is well known, fat reduces dustiness in feed, improves appearance and palatability and increases capacity of pellet mills.

As for mixing and applying, Honeggers'—one of the first to use fat in feed extensively—finds no problem at all. The fat is brought in by tank truck from nearby suppliers. It is stored in bulk tanks, and sprayed directly on the feed in the mixers.

(Air view, Honeggers' mill—Fairbury, Ill.)

Production is no problem in Honeggers' modern mills. Fat is simply sprayed on feed in mixer.

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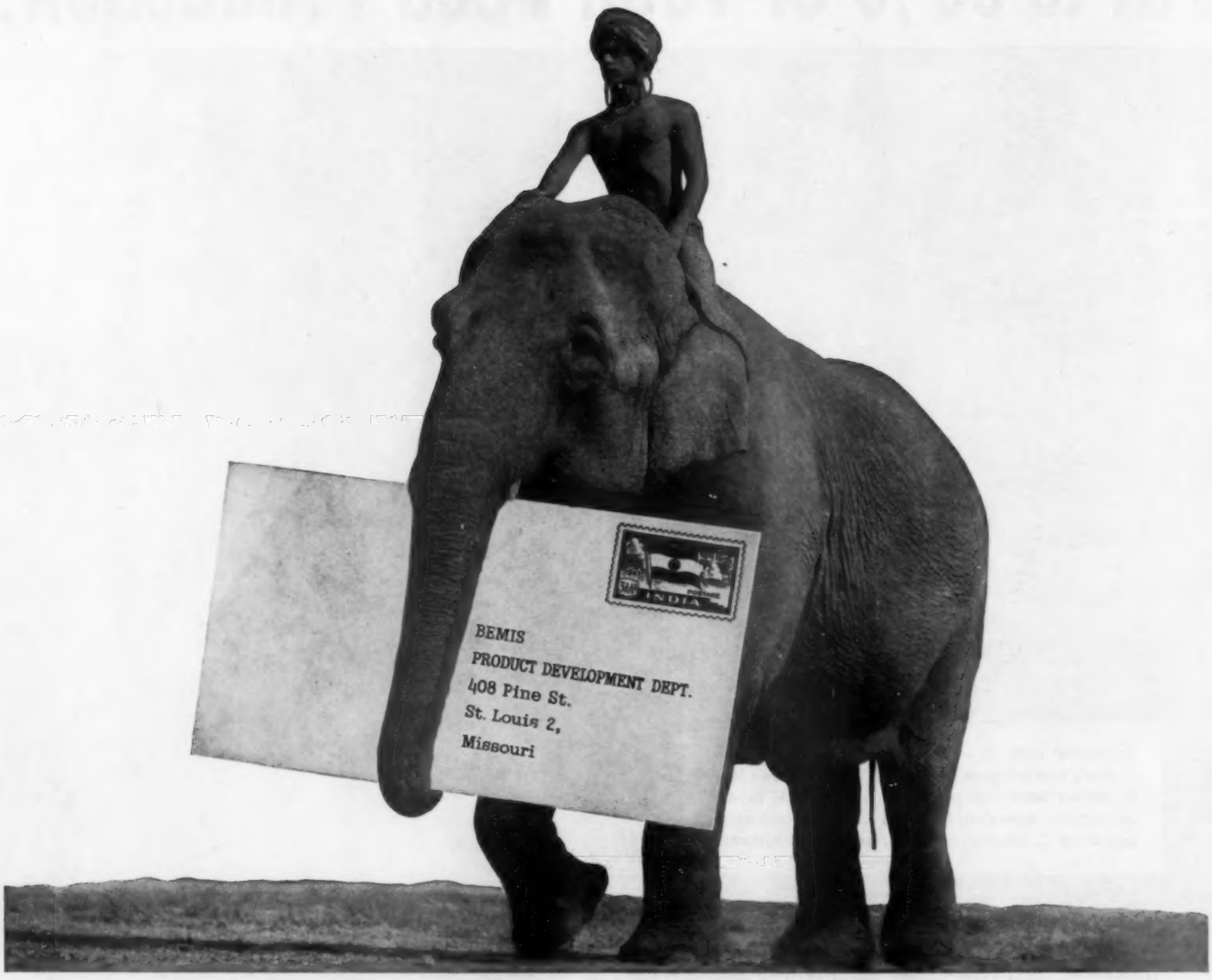


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*Bemis may already be making the better package you need. Call, write, or ask your Bemis man.*

## Midwest Needn't Fear Southeast Grain Output Boosts, Speaker Says

MEMPHIS—The Midwest grain trade need have no worry that increased production of grains in North Carolina and the Southeast will cut its markets, the director of the markets division for the North Carolina Department of Agriculture, Raleigh, said recently.

John A. Winfield, speaking to the sixth annual joint conference of the National Association of Chief Grain Inspectors and members of the grain division, U.S. Department of Agriculture, said that on the contrary, he believes grain demand will grow more than his state can produce.

The same is true in other southeast states, he believes.

Mr. Winfield took note of North Carolina's big upsurge in grain-growing, particularly in the past 10 years. He said the state ranks in the third group of the 48 states, but pointed out that North Carolina production is very small compared with the Midwest.

"In our state and section, we have problems of weather, with higher moisture, and insect problems resulting from higher temperatures throughout the year," he said. "Our advantages in growing grain stem from the fact that we are in a deficit grain area and transportation costs are so high that it is profitable for us to grow grains."

### Grains on Increase

With flu-cured tobacco on the downtrend, the biggest acreage in North Carolina now is in grains. Production of grains for the state is about 100 million bushels annually, with some 8 to 10 million bushels of wheat and about the same amount of oats. The state has 15.5 million bushels of modern grain handling space, most of it built in the past 10 years, he said.

Livestock and livestocks products are becoming tops in North Carolina agriculture, Mr. Winfield said.

Mr. Winfield's speech was the feature of the first session.

During the day, a panel discussion developed on "Fee Charges for Extra Services." It was the consensus among the 200 delegates from 40 states that fees should be charged for services outside the grading factor.

A number of other talks and panels occurred the opening day.

On the second day, Dr. Herman A. Rodenhiser, assistant administrator of production research for the Agricultural Research Service, Washington; Roy W. Lennartson, deputy administrator of the Agriculture Marketing Service, Washington, and Joseph E. Bailey, grain superintendent of the grain terminal department for Cargill, Inc., Minneapolis, were among the speakers.

The members of the grain division, USDA, held their own meetings the following two days.

## Thomas Kelley Joins Irving R. Boody Firm

NEW YORK—Thomas E. Kelley has joined Irving R. Boody & Co., Inc., New York, as vice president to handle the sale of imported oils, fish meal and fatty acids. The appointment was announced by Irving R. Boody, Jr., president.

Mr. Kelley replaces John Kraker, who recently resigned from the firm.

For 10 years Mr. Kelley worked for Mitsubishi Co., handling the importation and sale of crude vegetable oils, greases and feedstuffs. He later joined the Wilbur Ellis Co., acting as a broker in trading soybean meal, grains and fishery byproducts.

In 1950 he joined E. F. Drew & Co., to form a trading division handling feed ingredients, a division which later grew to include the purchase of miscellaneous fats and oils as well as the sale of edible products.

### RETIRED FEED MAN DIES

SCRANTON, PA.—Wilbur F. Sherwood, 90, who at one time owned and operated a feed mill at Uniondale, Pa., died April 3 at his winter home in Florida. He retired from the milling business several years ago.

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But a scientist recently estimated that only 30% to 50% of major nutritional findings of value have been uncovered to date!

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Many of these advances may not be as far away as you might think. Feeds are moving ahead—fast. Keep in touch with your feed man, because:

**Science Comes to the Farm in a Feed Bag**

*A "well done" to the feed industry*
*on its golden anniversary*
*from Chas. Pfizer & Co., Inc.*

This advertisement, one in a continuing series on behalf of the scientific advances being incorporated in today's fine formula feeds, is currently appearing in Farm Journal, Successful Farming, County Agent & Vo-Ag Teacher, Better Farming Methods, Farm Quarterly and Agricultural Leaders' Digest.

# "Public opinion is everything. With public opinion nothing can fail, Without it nothing can succeed"

*1st Lincoln-Douglas debate*
*Aug. 21, 1858*

As we celebrate the 50th anniversary of the AFMA, one thing is sure: feeder and farmer opinion of our industry is mountain-top high.

But . . . as you know, there's only one thing harder than building a good reputation: *keeping it!* Once this goal is achieved, it acts as a demanding tyrant.

We at Pfizer pledge ourselves to do everything within our power to help you keep feeder and farmer opinion favorable to the feed industry and to preserve and add to your well-earned reputation for service.

One contribution is this message to feeders on the opposite page.

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# Effects of Grinding Method on Feeding Practices Reported

Bulk handling of grain, pick-up and delivery service and mobile grinding have been responsible for some of the changes that have occurred in the practices of farmers using different methods of feed grinding and mixing.

Data concerning feed grinding and mixing practices were obtained from 45 selected farms in western New York, an area of relatively high grain production, in September, 1957, as a part of a study to determine costs and labor requirements of the different methods of feed grinding and mixing. These farms consisted of 15 mill-serviced farms, 15 mobile-serviced farms and 15 which ground and mixed feed on the farm.

The average land per farm was 325 acres, which is approximately twice the average area of farms in the four counties where the study was made. For each group of farms, the average in grain was 25% of the total acreage per farm. The method of grinding apparently was not related to number of acres used for grain or the type of grain produced. The farms selected had an average of about 40 cows per farm in each group and were, therefore, comparable in size of operation.

**TABLE 1. Per Cent of Grain and Protein Content of Rations Fed**
45 Farms, Western New York, 1956-57

| | Home-grown* grains as per cent of total ration | Average per cent protein in dairy ration | Tons of home-grown grain fed per animal unit |
|---|---|---|---|
| 15 milled-serviced farms | 61.5 | 15.3 | 0.895 |
| 15 mobile-serviced farms | 71.3 | 13.4 | 1.089 |
| 15 home-grinding farms | 66.2 | 14.9 | 0.943 |

*Includes small amounts of purchased grain.

### Amount of Grain

Farmers who hauled their grain or had it hauled for them to the mill used the smallest amount of grain in their rations (table 1). This might be expected because of the cost of labor and trucking involved. The mobile-serviced farms used the highest per cent of grain of the three groups, and the mill-serviced farms had the highest average per cent protein in their dairy rations. Tons of feed fed per animal unit were approximately the same for the three groups.

The importance of individual ingredients varied among farms using each of the three methods of grinding and mixing (table 2). The percentages are based on the total feed used and not upon the rations for an individual kind of livestock. Farmers using mill or store service fed greater amounts of individual ingredients such as wheat bran and soybean oil meal. This may be due to the convenience of transportation and warehouse facilities at most stores and mills. Since these ingredients were readily available, farmers apparently believed that they were able to obtain more satisfactory and economical rations by using them to a greater extent than the high protein supplements.

*EDITOR'S NOTE: A study was made by the department of agricultural economics at Cornell University, Ithaca, N.Y., recently to determine costs and labor requirements of the different methods of feed grinding and mixing. Part of the study was an investigation of the practices of 45 farms in western New York. The farms were divided into three groups which included mill-serviced, mobile-serviced and home-serviced grinding and mixing. Some of the data from that study was included in a report by Robert P. Bentz of the Cornell economics department in a recent issue of Farm Economics, a department publication. His report shows the relationships of the grinding and mixing method with grain and protein content of the ration, with average feed consumption and with frequency of grinding and amount ground per time. The accompanying article is the text of his report.*

Farmers using home-grinding equipment fed practically no molasses. Without blending equipment it is difficult to put molasses into ration. Therefore farmers grinding and mixing their rations at home, but without blenders, got along without this source of feed energy.

Farmers serviced by mobile operators used less individual ingredients than did the mill-serviced or home-grinding farmers. Although it is possible to mix as many ingredients as desired, usually only protein supplements were mixed with grain and molasses because of the convenience to both mobile operator and farmer.

### Amount Mixed Per Time

The amount of feed mixed per time was closely related to the frequency of mixing (table 3). The benefit of utilizing labor when it was available plus the desire for "fresher" feed caused home-grinding farmers to grind and mix their feed more often and in smaller amounts than did the other two groups. To a great extent, the frequency of mixing on mobile-serviced farms was the result of the schedule of mobile operators.

Recent changes in feeding practices resulting from newer methods of grinding and handling home-grown grain may be only the beginning of still further changes in the future. These changes may encourage use of home-grown grain in livestock rations. Any increase in home grinding or mobile service is likely to increase the use of prepared protein supplements but reduce the use of individual ingredients. Lack of molasses-blending equipment for individual farm use may discourage any marked shifts to home grinding and mixing.

**TABLE 2. Relationship of the Method of Grinding and Mixing Feed to Average Feed Composition**
45 Farms, Western New York, 1956-57

| | Per cent of total feed from different ingredients | | |
|---|---|---|---|
| | Mill-serviced farms | Mobile-serviced farms | Home-grinding farms |
| Grain | 61.5 | 71.3 | 66.2 |
| Individual ingredients | 17.1 | 2.2 | 11.7 |
| Molasses | 7.9 | 6.7 | 0.2 |
| Protein supplements | 12.0 | 14.6 | 11.6 |
| Salt and minerals | 1.3 | 1.3 | 0.7 |
| Complete commercial ration | 0.2 | 3.9 | 9.6 |
| Total | 100.0 | 100.0 | 100.0 |

**TABLE 3. Relationship of the Method of Grinding and Mixing of Feed to Frequency of Grinding and the Amount Ground Per Time**
45 Farms, Western New York, 1956-57

| | Mill-serviced farms | Mobile-serviced farms | Home-grinding farms |
|---|---|---|---|
| Average days between grinding | | | |
| Winter | 13.6 | 10.5 | 6.7 |
| Summer | 15.3 | 10.5 | 9.0 |
| Average pounds mixed per time | | | |
| Winter | 4,592 | 4,886 | 3,540 |
| Summer | 4,279 | 4,188 | 4,060 |

### FEED STORE BURNS

STURDIVANT, MO.—Fire of undetermined origin destroyed the B. H. Bollinger, Jr., general mercantile and feed store here recently. Losses were set at more than $50,000.


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# A FEED MILL THAT GROWS

## Planning, Equipment Needs, Investment and Capacities As a Feed Mill Is Expanded by Stages

By T. E. Stivers
Milling Engineer

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T. E. Stivers

*EDITOR'S NOTE: In the accompanying article, Mr. Stivers points out the importance of adequate planning in designing and building a feed mill. Then he shows how a mill can be expanded by stages. In doing this, he notes basic equipment and storage needs and the additions required for various stages. Some approximate costs also are given. Mr. Stivers operates a milling engineering firm, the T. E. Stivers Co., at Decatur, Ga., providing machinery, mill design and consulting services for the feed and grain milling industries. He is a graduate of the milling school at Kansas State College. He was with the Quaker Oats Co. at Sherman, Texas, and Akron, Ohio, and with Sprout, Waldron & Co. before organizing his own company.*

Virtually everyone who wants to build a small or medium feed mill writes the same general prescription —"We want to start off in a modest way, and have a **small** but **efficient** operation, but not do anything that will have to be changed or thrown away later as we expand." The last word, "expand," may mean anything from two to ten times original capacities.

Experience has shown that in most cases good planning, plus a willingness to provide ample property, plus a moderate extra investment in foundations and certain other items originally, can provide an efficient and economical mill that will allow expansion from two to four or five times original capacity and working storage. If any of the above are sacrificed, cost of future expansion may be blocked or come only at a very high cost, if efficiency and quality are to stay high.

One of the first things, in our judgment, a prospective mill owner must decide is the direction and extent his future expansion will likely take. Basically he himself must make this decision. No mill builder or designer can give him an economical, efficient package that will fit all purposes and future possibilities. However, an intelligent and thoughtful exchange of ideas between the owner and his designer or builder can help the owner come to a sound design that will give maximum future potential and optimum long range cost.

### Adequate Planning Needed

Mills, of course, follow many different general patterns, depending mainly on geographical location and type of market. There are probably 15 to 20 fairly established patterns. While the large all-purpose mill produces the major share of the U.S. tonnage, the medium and small mills represent a large proportion of the total machinery and property investment. With the advent of integration, a lot of money has been spent for small and medium mills without adequate planning and design beforehand. There are, as usual, several good reasons for this. One is that many of these mills are built with limited financing. Since it is essential to save every possible dollar, the owner begins by "saving the engineering." He may rely on a mixture of opinions gathered hurriedly from various outside sources plus his own knowledge of what he wants, and taking the limited amount of time that he has to design, contract and oversee erection of his new plant.

A second reason for inadequate planning of this type mill is that they tend to be "one-man operations." The owner-operator is under tremendous continual pressures from all business, each one at various times during the day or week requiring his fullest attention, leaving too little time for him to adequately plan and handle the new construction. This same lack of time also may prevent the owner from getting around to see the newest and latest developments, and the coming trends in production equipment which he will want to provide for in his new plant. Another casualty of the capital shortage is that property and foundations for future expansion generally can be left off easier than anything else in the initial installation without impairing initial efficiency, so they are "saved" along with the engineering.

All of these above problems, plus many more special reasons for improper design, are the result of very real and bona fide pressures and conditions that exist inherently in this small and medium type of feed operation. Assuming however that these pressures will continue to exist for some time in the small and medium mills, it is possible for the owner to get more for his dollar in the new plant by adequate planning.

One specialty type of plant that is becoming prominent in several areas is the medium, 50 to 200 ton per day, bulk type plant to produce primarily poultry or hog feed, or similar mash and small pellet feeds. Those who may be planning such a mill or others considering an expandable mill of a different type, may find some of the ideas shown in the adjoining sketches (next page) to be adaptable to their problems. (Additions in each stage are shaded in the sketches.) In looking these over, you will notice the following:

**STAGE ONE:**

**Original Mill:**

The mill is designed to make and handle dry and free flowing mash, bulk or bag output. Initially it has this basic equipment:

1—Corn bin, 80 tons.
1—Concentrate bin, 75 tons (may be used for protein).
1—Corn meal bin, 80 tons.
1—Hammermill, 75 h.p., with 40 h.p. separate fan.
1—Two-ton horizontal mixer and surge bin with discharge screws.
1—Mash elevator for loading out to bulk or bag.
1—Semi-automatic bagger under 2 six-ton bins.
1—Power shovel.
1—10'x50' 50 ton truck scale.
1—Manual pushbutton panel and two-ton scale over mixer.

Limited warehouse space (approximately 30'x48' available for storage).

Capacity on a concentrate basis, assuming 50 to 70% corn and 30 to 50% concentrate, would be 10 to 12 tons per hour, efficiently, if most of the output is in bulk. Using the same labor and the concentrate bin for soybean meal or other protein, five to six tons per hour of full formula feed could be produced. By using more labor on full formula feed, capacity could be pushed up to 8 to 10 tons per hour, basis 70 to 80% bulk outgoing.

Although these capacities are available, it is usually expected that during the first year or so of operation, such a mill would be operated at perhaps 50 tons per eight-hour day while sales are being developed and the production crew learning the mill.

**STAGE TWO:**

**Added Equipment:**

4—Fifty-ton overhead working bins (2500 cu. ft. each).
2—Two-hundred-ton outside corn bins (or other grain).
4—Ten-ton bulk bins, over scale.
1—Automatic batching system for mixer.
1—Truck hoist and shed for receiving.
1—Liquid blender and liquid storage.

The investment is approximately doubled.

At 75 to 100 tons per day expected output, we now have eight to ten days of raw materials storage and ½ day's storage of bulk finished feed.

This puts the mill on a "full-formula," or at the least on a "premix," basis.

**STAGE THREE:**

**Added Equipment:**

2—Fifty-ton working bins over scale.

Mill building tower, approximately 12 ft. by 24 ft. area by 48 ft. high, for bins and equipment over bagger and pellet mill.

Truck shed.

1—One-hundred h.p. pelleting outfit complete.
1—Fifty h.p. boiler.
1—Feed dresser.
1—Distributor under feed dresser.
1—Automatic bagging scale and sewing machine.
1—Manlift.
1—Spiral stairway.

Also conveyors and spouting.

The investment added is approximately the same as for Stages One and Two.

Total storage is increased only 20%, but finished feed storage is roughly doubled.

Pellets and crumbles put the plant on a substantially complete basis, and the mill is now a "full-formula" plant for poultry and hog feed. It is prepared to maintain rated capacity at 10 to 12 tons per hour, with the expectation of running at that rate or approximately 100 tons per day, and possibly up to 150 tons per day by using a partial second shift.

**STAGE FOUR:**

**Added Equipment:**

3—Fifty-ton working bins over scale.

2—Two-hundred-ton storage bins outside.

Additional mill tower, 12 ft. by 12 ft. square area, by 48 ft. high.

4—Bulk bins over truck scale at 10 tons each.

More shed at warehouse.

Second pellet mill outfit.

Second mixer and surge bin, with necessary elevating and conveying equipment and distributor.

The amount of added investment at this stage can of course be flexed widely to suit conditions. In some areas a drier and substantial additional storage might be preferred to the second pellet mill. Or the warehouse could be expanded up to 200 or 300 ft. if more bagged stock has been found necessary due to adding dairy feed to the line.

**GENERAL:**

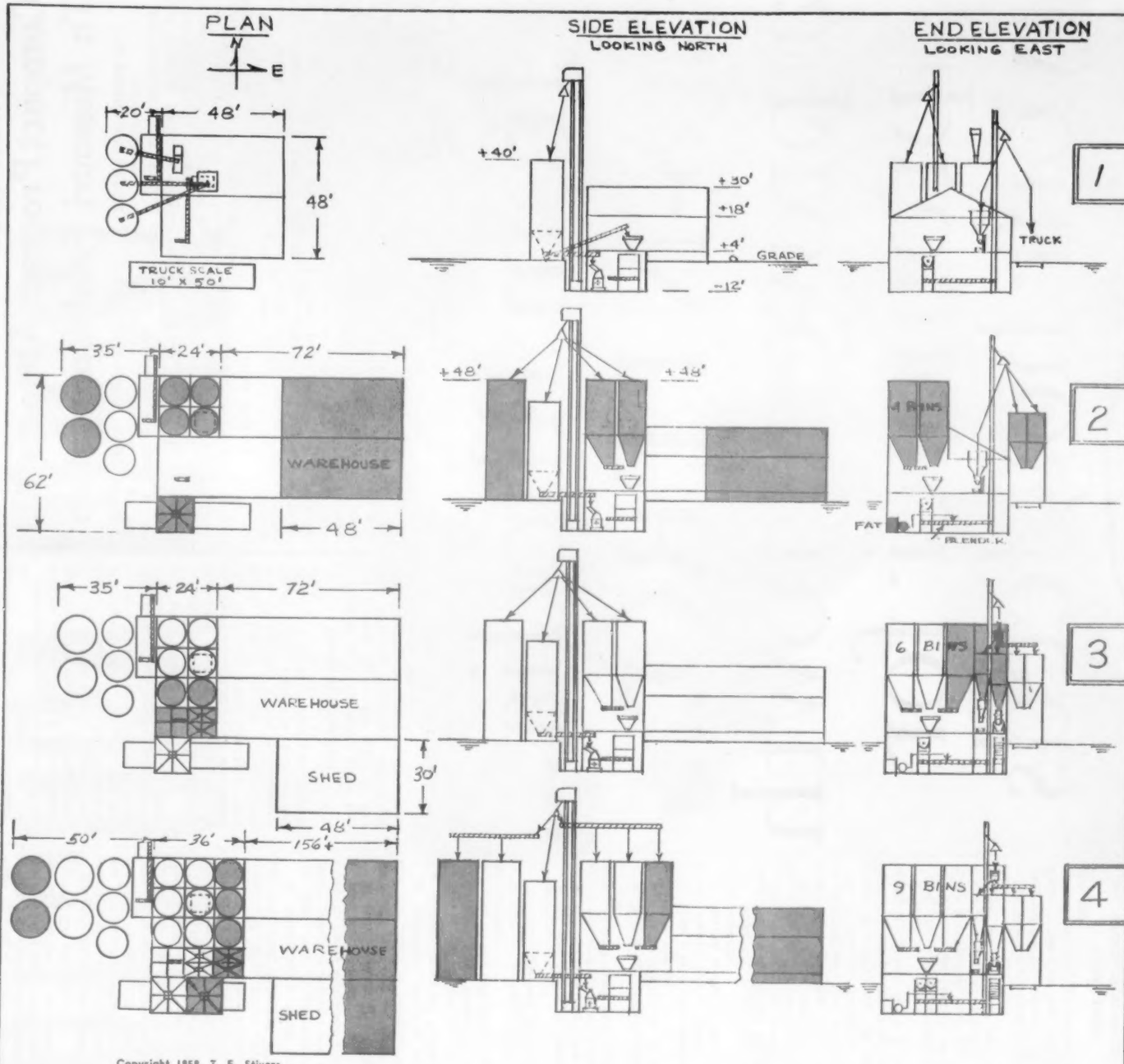
In reviewing and studying the above stage information in relation to the sketches, the following general conditions should be kept in mind:

1. The stages as planned are based on an independent mill with limited budget. Larger companies with multiple mills and more capital available would probably start with step three initially.
2. The sketches are largely schematic. Bin sizes can be changed within reasonable ranges. Some equipment is shown in one view only due to space limitations. Outside liquid tanks and receiving pit on north side have been omitted to save space.
3. Costs are strictly approximate and based on average building conditions and codes, using totally enclosed, fan-cooled motors, dust-proof controls. These must obviously be on an approximate and relative basis and are given as a guide only.
4. Liquid storage may be either in 5,000 or 10,000 gallon tanks (10,000 gallon anticipated in this presentation) to suit truck or rail receiving, and located 40 ft. clear of the mill to the north on plan.
5. Railroad spur, if available, would be on north side of building on plan. Receiving augers can be arranged for truck and/or rail receiving as required.
6. Liquids addition can be handled in several ways at different stages as shown in Table 1.

**TABLE 1**

| | Fats | Molasses | Fish solubles |
|---|---|---|---|
| In horizontal mixer | Up to 4% | Up to 2 or 3% | 2% |
| Twin-screw blender under mixer (replace conveyor under catch bin) | Up to 8% | Up to 10% | 2% |
| In liquid mixer under feed dresser | Up to 15% | Up to 15% (more if loaded bulk direct) | 2% |
| Sprayed on finished pellets or crumbles | Up to 8% | ..... | ... |

If liquid blender is placed under feed dresser, machinery bay needs to be carried approximately 6 ft. higher.

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# A FEED MILL THAT GROWS

T.E. STIVERS 5-5-58

| | TYPE OF MILL | NO. OF MIXERS & CAP./HR. | BULK INGREDIENT STORAGE & WORKING NO. BINS | MAT'L | TOTAL TONS | BINS FEED TO BAG BULK PELLET NO. BINS | TO | TOTAL TONS | WAREHOUSE STORAGE TONS | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | CONCENTRATE | 1 @ 2 TON | 1 | CONC. | 75 | 2 | BAG | 6 | | $75,000 |
| | | | 1 | CORN | 80 | 0 | BULK | 0 | 40 | |
| | POULTRY OR HOG | 12 T.P.H. | 1 | MEAL | 80 | 0 | PELLET | 0 | | |
| | TOTALS | | 3 | | 235 | 2 | | 6 | 40 | |
| | CUMULATIVE | | TOTALS | | | 5 | | 241 | 281 | |
| 2 | PREMIX OR FULL FEED | 1 @ 2 TON | 3 | INGR. | 225 | 2 | BAG | 6 | | $150,000 |
| | | | 4 | WORK. | 200 | 4 | BULK | 40 | 100 | |
| | | | 2 | CORN | 400 | 0 | PELLET | 0 | | |
| | POULTRY & HOG | 12 T.P.H. | | | | | | | | |
| | TOTALS | | 9 | | 825 | 6 | | 46 | 100 | |
| | CUMULATIVE | | TOTALS | | | 15 | | 871 | 971 | |
| 3 | FULL FEED | 1 @ 2 TON | 3 | INGR. | 225 | 2 | BAG | 20 | | $225,000 |
| | | | 6 | WORK. | 300 | 4 | BULK | 40 | 100 | |
| | | | 2 | CORN | 400 | 2 | PELLET | 20 | | |
| | POULTRY & HOG | 12 T.P.H. | | | | | | | | |
| | TOTALS | | 11 | | 925 | 8 | | 80 | 100 | |
| | CUMULATIVE | | TOTALS | | | 19 | | 1005 | 1105 | |
| 4 | FULL FEED | 2 @ 2 TON | 3 | INGR. | 225 | 4 | BAG | 40 | | $350,000 |
| | | | 9 | WORK | 450 | 8 | BULK | 80 | 200 | |
| | | | 4 | CORN | 800 | 4 | PELLET | 40 | | |
| | POULTRY HOG & DAIRY | 25 T.P.H. | | | | | | | | |
| | TOTALS | | 16 | | 1475 | 16 | | 160 | 200 | |
| | CUMULATIVE | | TOTALS | | | 32 | | 1635 | 1835 | |

# Compact Program Attracts 200 To Missouri Feed Convention

By THOMAS E. LETCH
Feedstuffs Staff

JEFFERSON CITY, MO.—A compact program featuring well-known state and national speakers attracted approximately 200 persons to the 44th annual convention of the Missouri Grain, Feed & Seed Assn. at Jefferson City May 4-5.

Feed topics dominated the program, but there was also information for the grain and seed people. Among the speakers were Ray Pollock, director of the grain division, Commodity Stabilization Service, Washington; Ray Bowden, retired executive of the Grain & Feed Dealers National Assn., Washington; Lloyd S. Larson, executive vice president of the Midwest Feed Manufacturers Assn., Kansas City; C. Robert Pommer, vice president, Corneli Seed Co., St. Louis, and president of the St. Louis Merchants Exchange; E. B. Winner, agricultural editor, University of Missouri; Dr. Frank Miller, University of Missouri, and D. H. Elmore, credit manager for Ralston Purina Co., Kansas City.

### New Officers

New president of the association is Alton (Bill) Bowers, Marco Mills, Inc., Joplin. He succeeds Ruby Green, Ruby Green, Inc., Kirksville. Other new officers are Curtis E. Carter, Carter Feed Milling Co., Odessa, first vice president; Dwight L. Dannen, Dannen Mills, Inc., St. Joseph, second vice president, and Henry H. Green, H. H. Green Co., Pattonsburg, honorary vice president. D. A. Meinershagen, Higginsville, was reappointed executive secretary-treasurer.

New members on the board of directors include Mark Swearengen, Henderson Produce Co., Monroe City; O. J. Nicholson, Ozark Beauty Feed Mills, Monett; Frank Hoffman, Hoffman-Reed Co., Trenton, and Mr. Dannen. Dale Moore, Moore Produce Co., Ava, and Clarence Schlimpert, Shawneetown Feed & Seed Co., Jackson, were elected directors.

Suggestions on how to handle credit customers were contained in the talk by Mr. Elmore and in the discussion that followed. Panel members were Rolla; Lloyd Turner, Turner-Reed, Inc., Chillicothe; Albert Hoff, Kemper State Bank, Boonville, and Barney McCoy, Ralston Purina Co., Kansas City.

### Credit as Sales Tool

"Credit is a wonderful sales tool for a feed dealer. He needs it. But like with any other tool, the dealer must become proficient in the use of it," said Mr. Elmore.

"If a dollar bill so covers your eyes when making a credit sale that you cannot use your good judgment, you are not using your credit tool as you should. You are in business to make a profit. Be sure you do."

The success of any credit control program does not depend so much on the policies which make up that program as on the skill with which a program is administered and the consistency of the execution of that credit policy.

The fundamentals for a good credit program, Mr. Elmore continued, are: (1) Know your applicant, (2) have a definite understanding on terms, and (3) maintain a systematic and consistent collection effort.

"In installing a credit program, the first step is announcing your credit policy in a warm and friendly letter to every customer you have," he told the dealers.

"This brings up the problem of collecting past due accounts so that the new policy is meaningful."

As important points in collection, Mr. Elmore listed the following:

"1. Get the debtor to like you so that he will want to pay the account. Sell him on the importance of paying his account.

"2. Get a part-payment with a definite arrangement for paying the balance.

"3. Be sure that any arrangement made for payment later is a definite agreement and based on some anticipated income that will enable him to pay.

"4. Button up your agreement with a post-dated check or a series of post-dated checks.

"5. Take a note or a series of notes if you cannot get a check.

"6. Secure a chattel mortgage when possible.

"7. Endeavor to arrange with the bank to loan the feeder the operating capital necessary to permit him to pay promptly for his feed needs.

"8. If it is the best deal you can make, take produce, grain, livestock or anything else that is available.

"9. If you are convinced your customer is a deadbeat, let him know that you are prepared to take legal action and then do it if he forces you to.

"10. Never let your debtor put you off. That is the first sin of trying to make a collection. Any past due account is worthy of insisting on some definite arrangement before you leave."

Mr. Elmore concluded his talk by commenting that credit will be profitable to the feed man when he controls it and does not permit it to control him.

### Credit Policy

Mr. Renick recounted his experience in establishing a credit policy. By establishing the policy and sending out letters announcing the policy to 1,000 customers, Mr. Renick was able to reduce his accounts receivable by $20,000 without losing any business. He said that now his customers know what his terms are, and he does not feel that he created any bad will by doing it the way he did.

"A Christmas letter of appreciation signed by all employees did more than anything else to create good will and hold down negative reaction to the credit letter," he said.

The use of mortgages to cover financed feeders was recommended by Mr. Renick.

Mr. McCoy, presently a buyer for Ralston Purina with a law degree and experience in credit work, said that use of a mortgage was a sound practice. Making the mortgage for the entire amount of anticipated feed usage is permissible, he said, because no matter what the amount of the mortgage, a feeder is liable for only the amount of feed he received on credit.

The use of post-dated checks as a collection tool was given sanction by both Mr. McCoy and Mr. Hoff, although it was suggested that the check be used only for deposit, not for endorsing over to others. A weak-


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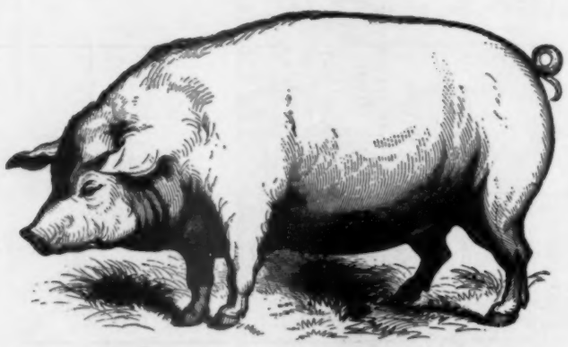

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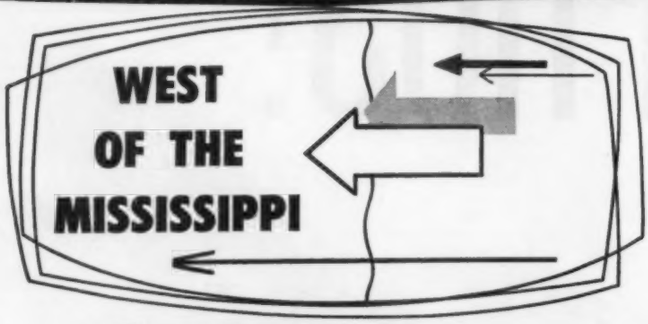


**See Page 57**

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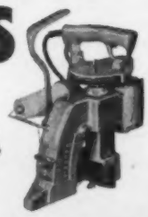

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ness of this method is that the dealer does not have the same legal recourse as with a check written against insufficient funds.

Mr. Turner brought out the importance of persistence in collecting by recalling several of his experiences.

Charging of the full legal interest rate on past due accounts was recommended by Mr. Elmore so that the feeder has incentive to go to his banker for a loan at a lower interest rate.

**Cooperation with Veterinarians**

The need for greater cooperation between feed men and other people serving the farmer was stressed by Mr. Larson. He especially called attention to the good that can come from a feed man getting acquainted with and fully cooperating with his local veterinarian.

"This same policy of working together for the good of the farmer should be applied to the vocational agriculture teacher, the county agent and college workers," he said.

As a step toward improved veterinarian-feed industry relations in Missouri, Mr. Larson announced that the Missouri Veterinary Medical Assn. had appointed a committee to work with the feed industry.

Dr. J. K. Farrell, president of the association, Boonville, noted that "we both exist for the economic good of the poultry and livestock producer. Our first step is to recognize that we have an area in which we can cooperate and then to do something about it." He said that the veterinarians hoped to meet with representatives of the feed industry in June to further develop the cooperative program.

Dr. Paul O. Spencer, secretary-treasurer of the association and assistant state veterinarian, also attended the convention.

**Feed Merchandising**

In discussing the merchandising of feed, Mr. Larson pointed out that in a recent survey it was found that producers buying feed from a particular company did so because of (1) personnel, (2) feed preference, (3) management assistance programs and (4) marketing assistance. "This particularly points up the need for good personal relations with your customers," Mr. Larson told the feed men.

In his talk, Mr. Pollock strongly defended Ezra Taft Benson, secretary of agriculture, citing his statesmanship in pursuing sound economic programs for the long range benefits of the entire economy. He said that the tide has now turned and the public is awakening to its responsibility to support Mr. Benson in the public interest.

**Ray Bowden Speaks**

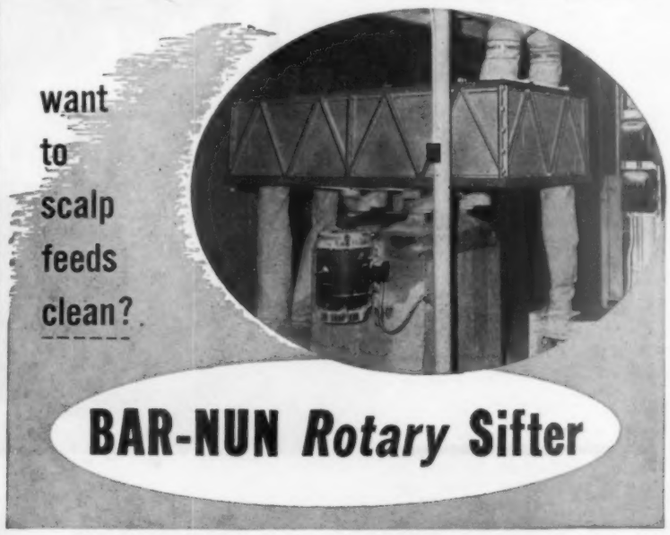
Speaking as a "retired gentleman with no affiliation," Mr. Bowden warned that the U.S. is growing so fast that by 1980 it will not have surplus food as it has now.

"By 1986 the farmer should be in the best position of any businessman in the U.S. because the population will outstrip production and the large farmer will be producing essentials under his terms," Mr. Bowden said.

He suggested four ways to reduce farm surpluses:

1. All supports and guarantees could be taken away. But this would cause such a violent disruption as to preclude the government from taking this action.

2. The surpluses could all be exported. Problems here involve relations with other countries, and the

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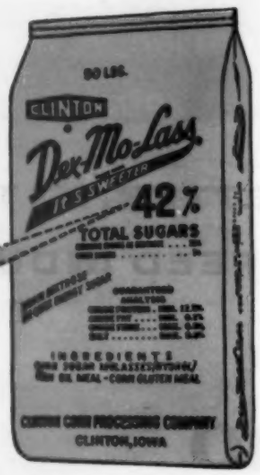


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inability to continue to serve a market once developed.

3. Subsidize the farmers but cut down acreage so low that the farmer would receive a good income for sitting. This is the worst thing that could happen because it would create a "sheltered peasantry," Mr. Bowden said.

4. The surplus production could be channeled into industrial uses. Vested interests fight these moves, but this method of disposing of the surplus is probably the most logical, Mr. Bowden indicated.

**Family Farm**

The family farm is preserving itself, Mr. Bowden said, without help from the politicians. "There are fewer workers employed on farms now than there ever have been in the 20th century. Machines are now the hired hands."

In commenting on congressmen, Mr. Bowden said that "a good many of them are in Washington because they are in the lushest job they can find. And their work in Congress reflects more than anything else a great desire to keep their jobs."

The need for practicing the art of listening was stressed by Mr. Winner. "A good job of listening can put dollars in your pockets," he told the dealers.

While the average person spends more time listening than he does reading or talking, Mr. Winner said that he listens poorly. One of the reasons is that a person talks at about 125 words a minute while a person can think at about 400 to 500 words a minute, and there is a tendency to give incomplete concentration to listening.

"No one likes to talk to someone who does not give complete attention to what he is saying," he cautioned.

"Listening to employees can enhance cooperation and provide more facts for making decisions. Listening to customers properly can help the sales person (1) make friends, (2) use his time efficiently by getting correct instructions the first time, (3) understand a customer's problems, (4) know what the customer wants and (5) sell him what he needs and wants."

Substituting for Prof. Gordon Nance, agricultural economist, University of Missouri, Dr. Frank Miller presented Mr. Nance's talk.

He predicted that the recession would be short and said the outlook for agriculture is good because of the increasing population. "Farming in the years ahead will be profitable for the efficient producers, but there are a lot of adjustments necessary."

**Seed Production**

In discussing the seed industry, Mr. Pommer pointed out that Missouri is one of the most important seed producing states in the nation, but that competition is increasing, especially from the western areas. "We have to be alert. And quality is of prime importance. We must see to it that only the best is made available to the grower," he said.

Sound seed laws well enforced are the best way to make sure that the grower gets the best seed, according to Mr. Pommer.

In looking ahead, the speaker predicted that in the next 15 to 20 years seed will be produced on specialized farms in areas best suited for seed production, and all under contract.

Also on the program, speaking briefly, were J. S. Williamson, commissioner of agriculture, Missouri Department of Agriculture; Walter R. Sanderson, director of the state grain warehouse division; Burt Wehmeyer, state A.S.C. director, and Prof. J. M. Ragsdale, extension economist in marketing, University of Missouri.

A movie on the "Inside Story of a Chicken Gizzard Grinding" was shown by Charles Rohde, Stone Mountain Grit Co., Aurora, Mo. This movie was made by the Granite Grit Institute.

**Resolutions**

In the business session of the convention, the following resolutions were passed by the members:

1. Urging full use of private grain industry by U.S. Department of Agriculture, commending CCC for returning to the trade the export business in corn and feed grains and the sale of bin-site corn to the local grain dealers, and pledging fullest cooperation with CCC and USDA in serving the best interests of the public.

2. Pledging full cooperation with Food & Drug Administration in getting improved sanitation in handling corn.

3. Recommending to members of the association that they write their congressmen to pass legislation removing the unfair tax exemption privileges enjoyed by cooperative forms of business enterprise.

4. Urging the passage of state legislation to provide facilities that will speed up the service of the Missouri grain inspection department at terminal markets.

A buffet supper opened the convention May 4. The meeting concluded with a social hour, banquet and entertainment May 5.

## Illinois Turkey Men Back Enabling Act

Directors of the Illinois State Turkey Growers' Enabling Act at a recent meeting gave "unqualified endorsement" to the National Turkey Enabling Act proposed by the National Turkey Federation.

Passed as a resolution, the endorsement stated that the state association "approve and give unqualified endorsement to the (act) and solicit the support of the turkey industry and all interested parties for favorable action on this enabling act."

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See Page 57

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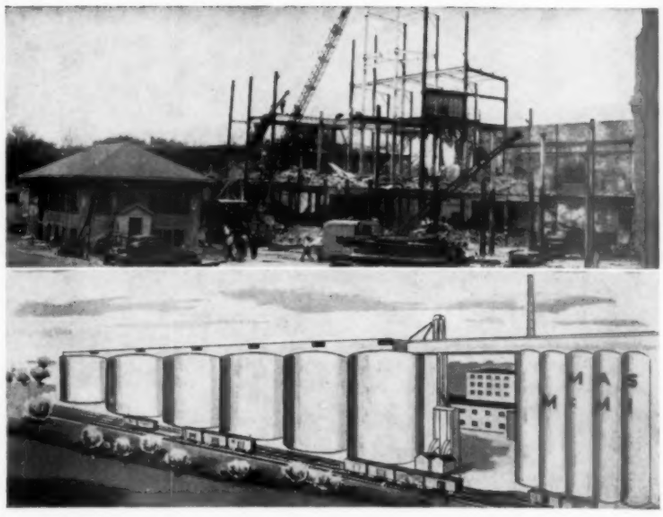

**OLD AND NEW—A few girders and some wall sections (top) are all that remain of the Central Sugar Co. buildings being razed to make room for new storage facilities (drawing, bottom) of Central Soya Co., Ft. Wayne, Ind. The new facilities will be located at Decatur, Ind. The sketch shows six of the 12 silos that will hold 5½ million bushels when construction is completed in October, 1958. The 10-in., reinforced concrete units, 80 ft. in diameter and 110 ft. high, will be the largest ever constructed by the firm. The sugar plant was purchased by Dale W. McMillen in 1933 and operated as the Central Sugar Co. until it was liquidated in 1944.**

## Meat Output Climbs, But Still 9% Under Production in 1957

WASHINGTON—One of the most obvious reasons for the current higher consumer prices on red meat shows up in the March and first-quarter commercial livestock slaughter and meat production report issued the end of April by the U.S. Department of Agriculture. Red meat output for March, while rising 5% above February, still was 9% under March a year ago. The quarterly total likewise was 9% under the period in 1957.

Beef production in March totaled 986 million pounds, 3% above February output but 10% under March a year ago; veal output climbed 7% from the month earlier but was 18% under the month a year ago; pork production rose 9% above February, but was 7% below March last year; output of lamb and mutton in March was 6% above February and the same as the output of March, 1957.

Poultry meat output appeared to be partially filling the gap left by the lower levels of livestock meat production, and no doubt was contributing to firm broiler prices. The poultry output for March, 1958, totaled 330 million pounds, ready-to-cook basis. This was 9% above February and 4% above March a year earlier.

Production of red meat for the first three months of 1958 totaled 5,984 million pounds, compared with 6,564 million pounds the first quarter of 1957. Of the January-March volume, 3,157 million pounds were beef, down 10% from last year; 284 million pounds were veal, down 18%; 2,375 million pounds were pork, down 6%, and 168 million pounds were mutton and lamb, down 11% from 1957.

Of particular interest was the report that it was taking more hogs to produce the same amount of meat in March. The average live weight of hogs slaughtered during March was 230 lb. per head live weight—2 lb. heavier than February but 2 lb. lighter than the March, 1957, average. The amount of lard rendered per 100 lb. live weight of hogs was 13.3 lb. in March, 13.7 lb. a month earlier and 14.6 lb. in March, 1957.


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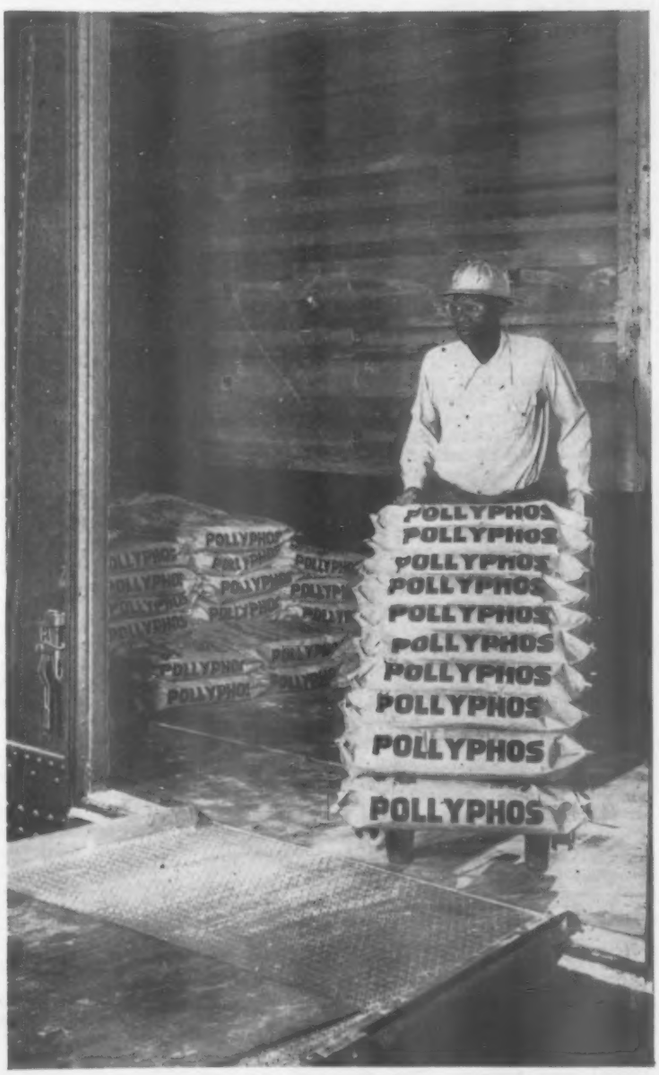


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# Enzyme Supplements for Feeds—Some Implications

- Main Effects of Enzymes
- Variability in Responses to Enzymes
- Types Suitable for Feeds
- Effectiveness for Various Types of Poultry

By Dr. James McGinnis
Washington State College

*EDITOR'S NOTE: In 1957, Washington State College researchers reported on studies in which the nutritional value of barley was markedly improved by water treatment of the grain or enzyme supplementation of the feed. Since then, there has been continuing research on enzyme supplementation. Some persons feel that this research may have broad implications. Eventually, it is said, as more is learned, enzymes may be used to improve the value of other ingredients, too, and use of enzymes in formula feeds may become widespread. Meanwhile, in the accompanying article, Dr. James McGinnis, chairman of the WSC poultry science department, points out effects of enzymes in barley-containing diets for poultry and discusses some implications of the research work. He deals with such things as sources of enzymes, variability in responses and effectiveness for different types of poultry. Dr. McGinnis looks for use of enzymes in poultry feed manufacturing to increase with further developmental research on the production and improvement of enzymes specifically suited for feed fortification.*

We are now beginning to see application of findings made last year showing that the nutritional value of barley can be improved by water treating the grain or adding crude enzyme supplements to feeds containing barley. It is anticipated that developmental research on the production and improvement of enzyme supplements more specifically suited for feed fortification will speed up the use of enzymes in poultry feed manufacturing.

This application will be particularly important in areas of the world, including the U.S., where barley is produced in abundance and the production of corn as a feed grain is limited. It is expected that the findings that barley can be improved nutritionally will be of much greater importance to other countries of the world than to the U.S.

**MAIN EFFECTS OF ENZYMES:** The addition of suitable enzyme supplements to poultry feeeds has three main effects:

**a. Improved growth.** When barley is substituted for corn in an ordinary chick or turkey ration, growth is markedly depressed. Enzyme supplecents of the proper kind and amount effectively prevent this reduced growth on barley diets. In many experiments, growth of chicks fed diets containing barley as the only grain and enzymes has been fully equal to that of chicks fed diets containing corn.

**b. Feed utilization.** The very poor feed efficiency obtained with diets high in barley is markedly improved with enzyme supplements. This poor feed efficiency on high barley diets cannot be completely explained on the basis of higher fiber content of the feed since it is obtained when pearled barley or hull-less barley is used as a substitute for corn. It appears that some fraction of barley other than crude fiber is made available to the chick by action of enzymes added to the feed. These enzymes appear to be ones not produced normally in the body of the chick.

**c. Improved litter condition.** It has been a common experience of poultrymen to observe an aggravated wet litter problem when barley is used in the feed in place of corn. Measurements of water consumption by chicks fed diets with either barley or corn have shown that the consumption of water is greatly increased when barley is used in the feed. Studies have also shown that the feces of barley fed birds are much higher in their water content. The addition of enzymes to the feed effectively lower water consumption and the water content of manure. This effect itself is of great practical significance to the poultryman.

Dr. James McGinnis

**TYPES OF ENZYMES SUITABLE FOR FEEDS:** Our studies have shown that enzymes from three different sources are effective when added to feeds containing barley. These sources are (1) bacterial fermentations, (2) mold fermentations and (3) specially malted barley.

A sufficient mount of work has not been conducted on enzymes from the various sources to understand specifically the advantages of one over the other. From a practical standpoint, the economy of production of the different types will probably govern the one to be used in practical feed manufacturing.

**VARIABILITY IN RESPONSES TO ENZYMES:** Since the initial discovery that enzyme supplements improved barley, confirmation has come from many laboratories. In contrast, there have been a number of laboratories which have failed to confirm the findings. This failure of response could possibly be due to (1) a difference in level or chick activity of the enzyme supplements employed (presently available enzyme supplements have not been standardized by chick assay), or (2) a difference in the barley used in feed formulation.

It occurred to us that some varieties of barley might respond to a lesser degree to enzyme supplements because of varietal dfferences. We, therefore, collected nine different samples or varieties of barley produced locally. The results of feeding these different varieties and of supplementing the diets with enzymes or water treating the barley are shown in Table 1.

It is apparent from these results that all samples of barley were poor from a nutritional standpoint. Likewise, all samples responded to enzyme supplementation, and an even greater response was obtained by water treating the different grains. It, therefore, appears that the differences in barley are probably not due to varietal differences. Instead it is suggested that samples of barley grown in other parts of the country may have been wet and dried sufficiently before harvest by rains to bring about a degree of water improvement. Indeed, it has been the observation that where a response to enzyme supplementation was not obtained, barley was essentially equal to corn in nutritional value. This would support the possibility of improvement due to some climatic factor.

**ENZYME EFFECTIVENESS FOR VARIOUS TYPES OF POULTRY:** Experiments have shown that enzyme supplements improve barley for young chicks, young turkeys and young geese. There has been a general observation that the effect on feed efficiency appears to become less as the birds grow older. In contrast, 18-week-old turkeys gave an excellent growth response to enzymes.

Laying hens have shown little or no response to enzyme supplements in limited experiments to date. It is difficult to explain why these results are obtained since there is a marked difference in the feeding value of corn and barley for laying hens as well as for young chicks and turkeys.

**TABLE 1. Feeding value of nine different varieties of barley.**

| Variety | Supplement or treatment (3 wk. data) None Av. Wt. gm. | None F. E. | 2 gm. F.A./lb. Av. Wt. gm. | 2 gm. F.A./lb. F. E. | $H_2O$ Treatment Av. Wt. gm. | $H_2O$ Treatment F. E. |
|---|---|---|---|---|---|---|
| Gem | 155 | 2.11 | 193 | 1.95 | 210 | 1.78 |
| Ruffiyn | 156 | 2.09 | 204 | 1.96 | 230 | 1.89 |
| Belsford | 137 | 2.33 | 211 | 2.02 | 228 | 1.97 |
| White Winter | 153 | 2.10 | 206 | 1.94 | 234 | 1.76 |
| Gem | 141 | 2.15 | 190 | 1.98 | 207 | 1.85 |
| Hannchen | 156 | 2.15 | 204 | 1.92 | 220 | 1.81 |
| Heines Hanna | 157 | 2.25 | 191 | 1.95 | 243 | 1.83 |
| Haiha | 163 | 2.16 | 196 | 1.91 | 225 | 1.76 |
| Betzes | 155 | 2.13 | 212 | 1.90 | 221 | 1.78 |

## Bulk Equipment Firm Names Sales Manager

CEDAR RAPIDS, IOWA — A. F. Clauss, vice president and general manager of the Highway Equipment Co., Cedar Rapids, has announced the appointment of Gale E. Allen as general sales manager. The firm manufactures spreaders and bulk delivery equipment.

Mr. Allen is a veteran of almost 30 years of service in the manufacturing and retailing phases of construction, agricultural and industrial machinery. As general sales manager, he will be directly responsible for the functions of equipment sales, advertising and the parts division of the company.

## Researcher Links Feed With Sheep Conception

FAYETTEVILLE, ARK. — "Level of feeding of ewes prior to the breeding season has a marked effect on the number of services required to settle hard-to-breed ewes," reported Chester Baugus, University of Arkansas researcher, as he discussed management of ewes at the second annual Sheep Study Day at the university recently.

Mr. Baugus gave these results of a one-year trial with ewes classed as difficult breeders: Ewes that grazed grass pasture and received 1 lb. of grain daily for seven weeks immediately preceding the breeding season, needed fewer services per conception. These ewes had more live lambs than similar ewes allowed 3 lb. of alfalfa daily, or than ewes that grazed only grass pasture during the pre-breeding period.

In general, Rambouillet ewes came in heat earlier in the breeding season than Hampshire, Suffolk or Southdown ewes, he said.

**Feeder Lamb Trial**

L. D. Williams, research assistant, said that feeder lambs offer farmers a flexible outlet for excess roughages. He summarized a 90-day feeding trial this way: "Feeder lambs fed lespedeza hay and either ground corn, ground milo, or rice bran gained more than 3/10 lb. a day. Similar lambs grazed on winter oat pasture either alone or with rice bran gained only 2/10 lb. a day. Feeding ground milo with the oat pasture made the lambs gain 3/10 lb. a day."

Relating research results of trials for wintering ewes, Dr. P. R. Noland, associate animal husbandman, said that in one experiment a complete concentrate mixture composed of ground corn, ground oats, molasses, soybean meal, wheat bran and minerals fed with lespedeza hay produced faster-gaining lambs than lambs from ewes fed either whole oats or soybean meal with lespedeza hay.

## *Broiler Production Averages Announced*

MORGANTOWN, W.VA. — The March production averages of West Virginia broiler growers were announced recently by Ted R. Hash, poultryman at West Virginia University.

For growers with a 6,500-bird capacity or more, flock size averaged 11,333 birds, with an average weight of 3.48 lb.

The feed conversion ratio was 2.66 lb., livability was 97.06% and the production efficiency index was 1.308.

For the same month growers with a capacity of 2,000-6,500 birds had flocks that averaged 3,113 birds, with an average weight of 3.63 lb. The feed conversion ratio was 2.57 lb., livability was 98.57% and the production efficiency index was 1.412.

There were 33 records submitted from eight counties, covering 175,100 broilers, Mr. Hash reported.

## C. M. Kemp Company Appoints Sales Agent

BALTIMORE, MD. — E. J. Funk, vice president of the C. M. Kemp Manufacturing Co., has announced the appointment of Jobe & Co. as the exclusive sales agent for Kemp equipment in Maryland, Virginia and the District of Columbia. Jobe & Co. has offices in Baltimore, Richmond, Va., and Washington, D.C.

Mr. Funk said that the complete line of Kemp gas generators, air dryers and combustion equipment is available from Jobe & Co.

**HOLDS OPEN HOUSE**

CABLE, WIS.—The grand opening of the Cable Cooperative Feed Mill was held recently. A grinder and mixer have been installed for complete mixing and grinding of all feeds.

# *The First-est with the Most-est*

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*U.S. Patent No. 2496634 Reg. Trade Mark

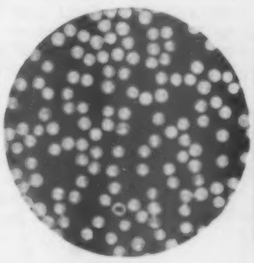
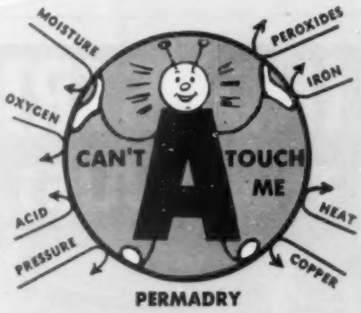


Photo-Micrograph of PERMADRY BEADS Magnified

### 1. FIRST Sealed-in Vitamin A Product for Feeds

PERMADRY was developed in the laboratory in 1945; and in 1950 a basic U. S. Patent No. 2496634 (Other patents are pending.) was granted for this product as the first stabilized sealed-in form of vitamin A for feeds.




PERMADRY

### 2. FIRST Choice of Sealing Agents for Protecting Vitamin A

As the pioneers in the field, the entire range of sealing-in agents was available to us. It was but natural to select digestible fat of proper melting point for PERMADRY in preference to indigestible and high melting materials and to sealing-in agents that are moisture absorbent.

### 3. FIRST to Promote the Concept: Vitamin A Quality = Stability + Availability

This concept was first developed in our basic U. S. Patent. Users of PERMADRY, who today comprise the "Blue Book" of feed manufacturers, have found for themselves in both laboratory and practical tests that the vitamin A in PERMADRY is almost indestructible in feeds and of the highest order of biological availability. The greater-than-theoretical vitamin A potency of PERMADRY makes it most economical to use.

### 4. FIRST to Show a Better than 2-to-1 Ratio in Improving Growth Rate and Feed Efficiency when Compared with Other Vitamin A Products

As early as 1953 we reported by newsletter the findings of University Experiment Stations and Independent Consulting Laboratories showing PERMADRY to be at least twice as effective in promoting growth and improving feed efficiency as feeding oils. Results of such studies were published in POULTRY SCIENCE in 1955-1956.

### 5. FIRST to Show a better than 2-to-1 Ratio in Increasing the Biologically-Active Vitamin A Reserves

In tests where PERMADRY replaced feeding oils, at the same level of vitamin A unitage in the ration, liver storage of vitamin A was increased manyfold. This has not been the only index of vitamin A storage following PERMADRY feedings; vitamin A storage in fertilized eggs is also greatly accentuated. The results of such studies were published years ago in POULTRY SCIENCE.

### 6. FIRST to Show that Vitamin A Reserves are Available

PERMADRY vitamin A reserves in the body, in the liver of growing chicks and/or in fertilized eggs, has been shown in publications in POULTRY SCIENCE (1955-56) to be available for utilization under conditions of stress or subsequent restricted vitamin A intake.

### 7. FIRST to Show a better than 2-to-1 Ratio in Decreasing Mortality

Reports of tests in POULTRY SCIENCE have shown that mortality of baby chicks and of growing birds was greatly decreased with PERMADRY in the ration as compared with other products.

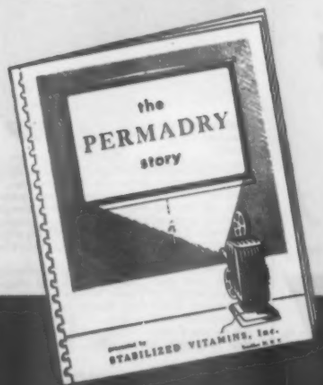
PERMADRY
LIVER Bank EGG Bank

Detailed Findings Supporting the Above Claims can be found in our booklet, THE PERMADRY STORY. Every nutritionist should have a copy. Reprints of the articles in POULTRY SCIENCE are also available to interested parties.

### 8. FIRST to Show Increased Egg Production and Hatchability

The 1955 publication from a University Experiment Station in POULTRY SCIENCE and a subsequent report covering work during the 1952-1955 period emphasize not only increased egg production but also increased hatchability.

Reprints from POULTRY SCIENCE




### 9. FIRST to Show Optimal Growth and Feed Efficiency Responses with as Little as 340 USP Units of Vitamin A Per Pound of Ration

Under ideal laboratory test conditions feeds containing low levels of PERMADRY vitamin A have been shown to be extraordinarily effective. Such low levels of PERMADRY feedings as 340 USP Units per pound of ration are, however, not recommended for practical feeds since stress factors are encountered in the field which make higher levels of vitamin A a necessity. This study by an Independent Consulting Laboratory merely reflects our continuing studies of PERMADRY effectiveness.

**PERMADRY truly is "The First-est with the Most-est!"**

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# Feed Service Bulletin Board

*Helpful Notes on Feeding and Management for Feed Men and Their Customers*

## Records Pay Dairymen

The unusually good prices being offered for "hamburger cattle" make herd culling more profitable for dairymen now than usual. And the dairymen enrolled in one of the several different types of record-keeping systems have the least trouble in finding the low-producers they will want to get rid of, says Hollis Hall, South Dakota State College dairy specialist.

By glancing at the cow's individual record, a farmer can tell her milk and butterfat record, and how much feed she required to produce it. He can also tell how she compares with the other animals in the herd. Culling becomes a matter of selling off the lowest-ranking cows.

The specialist points out that the dairyman who cares for a herd of cows averaging 200 lb. of butterfat is getting about 25¢ an hour for his labor, while the one who keeps a herd averaging 500 lb. of fat is earning $2.30 an hour.

Selling cull cows now would have the added advantage of eliminating unprofitable cows before they require additional feed. Some of these cows, he says, are actually eating more than they produce.

◆

## Cannibalism Precautions

Cannibalism—picking and feather pulling—is a brooder house problem that may turn into a laying house problem if not corrected, according to Irving Mork, North Dakota Agricultural College poultryman. Birds often turn to cannibalism to work off nervous tension caused by overcrowding or overheating.

Many controls have been suggested over the years, but debeaking is the only sure way, according to the specialist. This simple operation—cutting back the upper beak about half way between the tip and the nostril—can be done any time. Some poultrymen debeak all chicks at seven to 14 days. Others wait until trouble develops in the flock before they debeak.

The electric debeaker cauterizes as it cuts, and is preferred for all types of debeaking. They are fairly expensive to buy, but can often be rented from hatcheries and feed stores.

A new debeaker, patterned after dog toenail clippers, is preferred by many poultrymen for handling small chicks, says Mr. Mork. It's not recommended for older birds. A knife or scissors may be used, but they're usually slow work and the results may not be as good or as lasting as an electric debeaker or a clipper.

◆

## Livestock Returns

In the dairy business, more than in most other farm enterprises, returns from products sold are made up in a large measure of the labor put into the production of that product. This is especially true with milk sold.

A recent study by the U.S. Department of Agriculture of the time required to produce $100 worth of product showed that dairymen used 52 hours. This compares with 12 man-hours needed for broilers or 22 man-hours for the beef man.

◆

## Feed Waste Preventive

It's been recommended for some time now that filling feed hoppers only half-full for chicks and layers avoids feed waste. A newer idea is to place a piece of 1 in. mesh hardware cloth on top of the feed, inside the hopper, so it will settle as the feed is consumed. Be sure the piece of wire is smaller than the inside of the hopper to allow easy settling. The presence of the welded wire prevents the scratching or billing out of feed onto the floor or ground where it is usually gone.

◆

## Worm Drugs Tested

Three new worming treatments for pigs have been so successful in University of Maryland trials that the standard treatment for many years, sodium fluoride, has lost its "recommended" status with the university's


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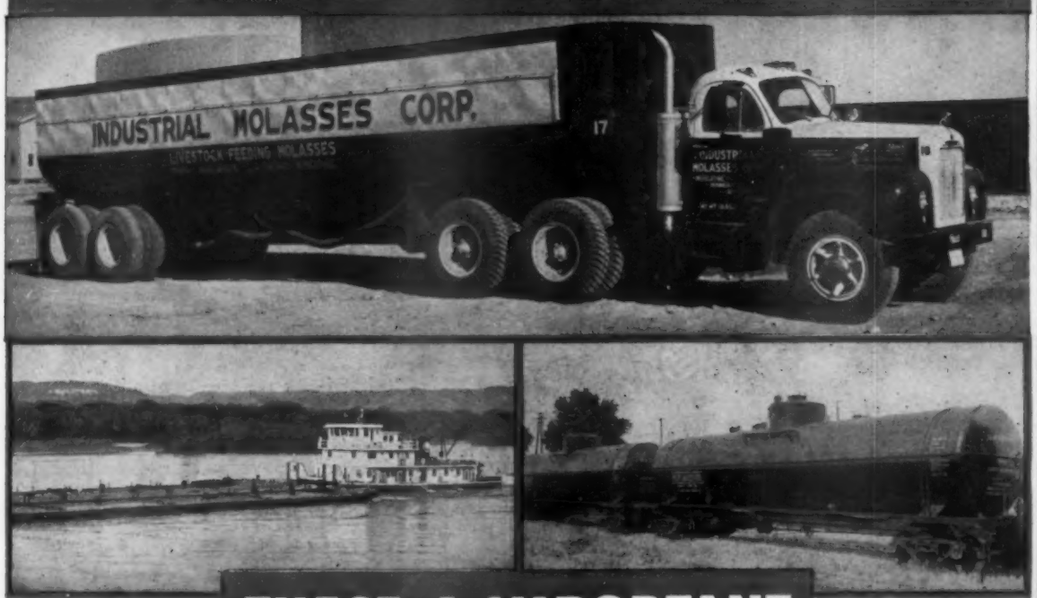


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This highly efficient wagon, feed mixer and elevator combination gives you ALL the time, money and work saving advantages of bulk grain handling. At harvest time, unload grain directly from combine into mixing wagon, then transfer automatically into elevator. Ideal for filling self-feeders and storage bins . . . cuts feeding time, eliminates costly trips to mill or elevator.

Telescoping PTO shaft with quick attaching universal joint and guard. Horizontal and vertical augers handle all feeds. V-type bin has two compartments, feeds flow freely to bottom. Sturdily constructed. Heavy-duty 5" channel steel frame, 14 ga. steel mixer hopper, 15x5 wheels with Timken bearings. Three sizes: 70, 110, and 150 bushels.

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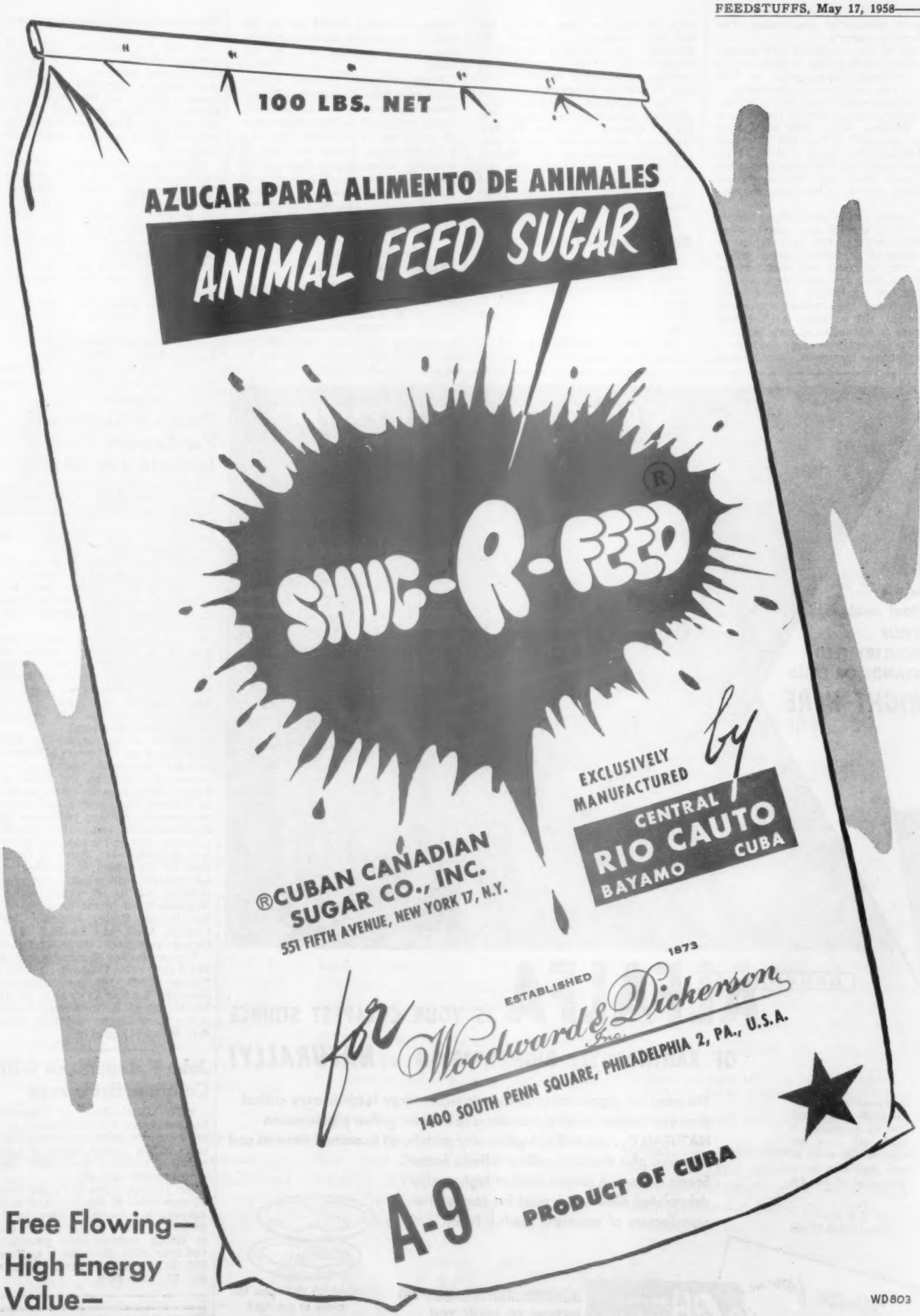


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animal husbandry department, the university reports.

One of the successful new anthelmintics (de-worming compound) is an antibiotic, hygromycin B. The other two are forms of piperazine.

The materials were tested in two investigations headed by Dr. Francis C. Wingert. Both tests were with pigs farrowed in the fall. The new materials gave good control of internal parasites, but according to Dr. Wingert their big advantage over sodium fluoride is that they are nontoxic.

Neither of the piperazines, nor the antibiotic showed any toxicity when administered in the feed. When administered in water during winter months, or under cold weather conditions, the piperazines were not satisfactory, apparently because some pigs found the treated water distasteful, the scientists said. Hygromycin is administered only in feed.

The piperazines are used as a short-term treatment, administered when the pigs are about 70 days old and again when pigs are about 135 days old. Hygromycin is fed continuously in the ration. It can even be included in the creep ration of baby pigs to prevent infestation.

"The tests show that we now have effective anthelmintics without the risk of toxicity," says Dr. Wingert. "However, the first and most important recommendation for dealing with internal parasite problems still is to prevent infestation with good management and sanitation practices."

◆

## Don't Overfeed Grain

Feeding too much grain in poultry rations results in reduced growth rate and production, and adversely affects feed conversion, warns B. L. Reid, Texas A&M College poultryman.

An all-mash starter, grower or laying feed intended to be the sole ration of poultry should not be fed with grain, except on recommendations of the manufacturer, he advises.

Producers have a tendency to feed more grain than is recommended because this portion of the ration is cheap compared to the concentrate, he points out. It is evident that such a dilution will reduce the level of vitamins, minerals and drugs which the bird would receive. In a growing diet, the coccidiostat may be diluted to the point of causing an outbreak of the disease, which is costly in loss of feed efficiency.

◆

## Watch Sneezing Pigs

Producers should be watching for sneezing pigs in this spring's litters, says E. K. Faulkner, Wyoming University extension livestock specialist.

Sneezing may be a warning sign of several serious pig diseases, including atrophic and necrotic rhinitis, or "bull nose."

One of the principal results of atrophic rhinitis may be a change in the bone structure of the pig's nose. Because symptoms of the two types of rhinitis are similar, a veterinarian should be consulted to determine which type is present and to suggest control measures and outline treatment.

Pigs from two weeks to two months old seem to be most susceptible to atrophic rhinitis. However, older animals may be carriers without showing any visible signs. Many authorities believe that the disease usually comes into a herd through an infected replacement animal. Therefore, farmers should buy healthy replacement stock from reputable breeders.

Symptoms of atrophic rhinitis, in addition to sneezing, include discharge from the eyes, unsatisfactory gains, rubbing the snout, shaking the head, and nasal bleeding.

Often in later stages of the disease, the pig may develop pneumonia.

## Program Announced For Georgia Poultry Institute Aug. 26-28

ATHENS, GA.—Details of the program for the third annual Georgia Poultry Institute were announced recently by Dr. J. Clyde Driggers, head of the poultry department at the University of Georgia.

The four-day session will be held at the 4-H Center at Eatonton, Ga., Aug. 26-28. Dr. Driggers said "the program is arranged to fit the needs of all segments of the Georgia poultry industry."

Dr. J. H. Quisenberry, head of the department of poultry science at Texas A&M College, will discuss blood antigens and new developments in cage layer management. Dr. S. A. Edgar, poultry pathologist at Alabama Polytechnic Institute, will talk about coccidiosis control.

Subjects to be handled by staff members of the University of Georgia include: Restricted feeding of replacement pullets by Dr. Henry L. Fuller; oiling eggs to retain quality by Kenneth May; protein and energy requirements for egg production by Hardy Edwards, and poultry diseases and their cost to the industry by Dr. Sam Schmittle. Dr. James E. Gates, dean of the school of business administration, will speak on creative thinking and its effects on profits.

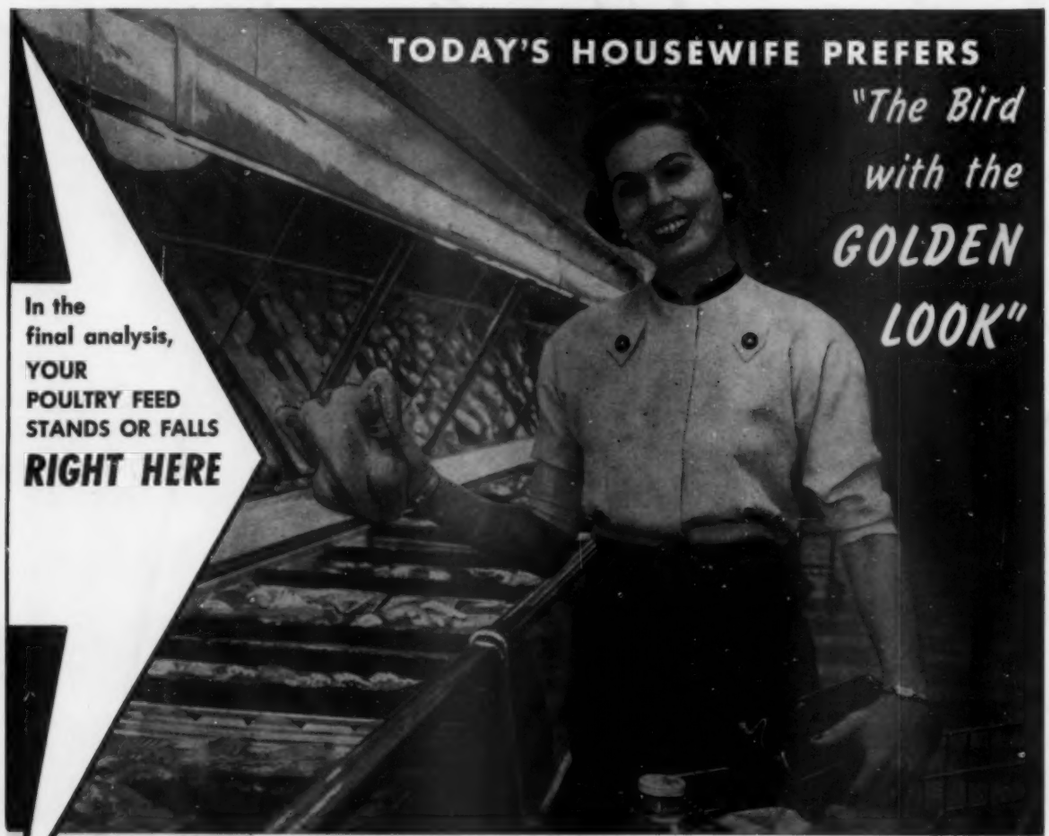
Others listed in the program outline include Berley Winston, East Lansing, Mich., and Edwin N. Ellis, Georgia experiment station at Tifton.

Representatives of industry include Wentworth Hubbard, Hubbard Farms; S. B. Hitchner, American Scientific Laboratories; W. H. Rhodes, Merck & Co.; Harvey Taylor, Arbor Acres Farm, and Max Brender, Brender Leghorns.

## John F. Lippmann Will Continue Brokerage

NEW YORK—John F. Lippmann has announced the continuance of a brokerage in feed ingredients and grain at the former offices of Lippmann & Stern, a partnership that was dissolved April 30.

Mr. Lippmann has had many years of experience in the feed and grain business and is well known in the eastern feed and grain trade, as well as among soybean meal processors and flour mills. His office is at Room 903, South Ferry Building, 44 Whitehall St., New York.



TODAY'S HOUSEWIFE PREFERS
"The Bird with the GOLDEN LOOK"
In the final analysis, YOUR POULTRY FEED STANDS OR FALLS RIGHT HERE

DEHYDRATED ALFALFA IS YOUR CHEAPEST SOURCE OF XANTHOPHYLL PIGMENTATION . . . NATURALLY!

*"In my opinion, the use of less alfalfa is a mistake since the xanthophylls in alfalfa are worth four times the cost of the alfalfa used in a ton of feed, even at the 5% level."*

Dr. J. R. Couch, Texas A & M College

The need for pigmentation in today's high-energy feeds is more critical than ever before. Alfalfa provides a rich-butter yellow pigmentation NATURALLY . . . as well as high quality protein, all important vitamins and minerals, plus the unidentified "alfalfa factor". Seems evident: A proper level of high quality dehydrated alfalfa is a must for competitive manufacture of successful poultry feeds.

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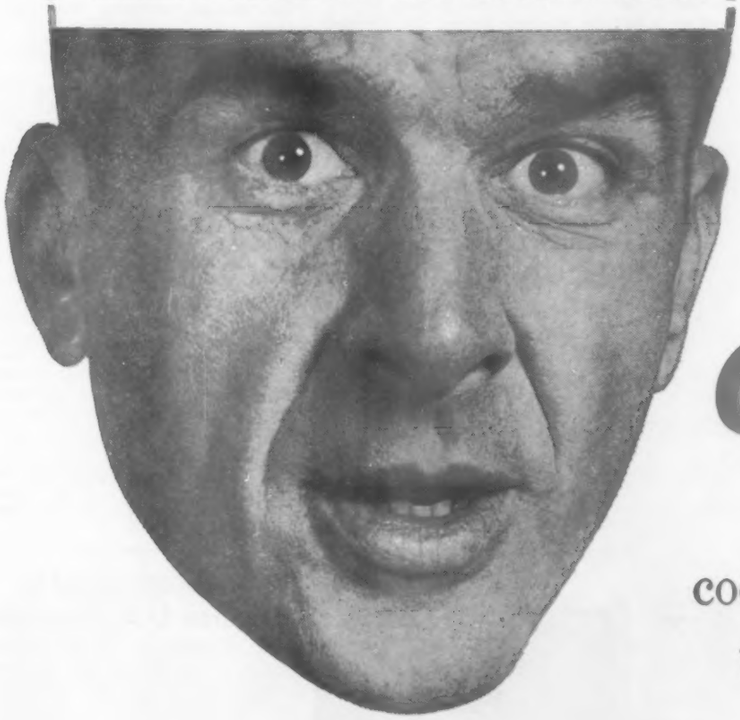

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## GlyCamide*

The new, safer coccidiostat from **Merck,** the makers of NICARB®

As you know, NICARB, a product of Merck research, has practically wiped out coccidiosis as a threat to broilers and replacement flocks. But, as nearly perfect as NICARB was—and is—in preventing coccidiosis in young and growing stock (a record of achievement in *over three billion birds),* it did leave one area for improvement: NICARB could not be fed, at broiler levels, to breeders, or other birds in production, without side effects.

**Now—a potent, safe drug for birds of all ages**—A program to test and screen other drugs to find a coccidiostat with the potency of NICARB, but without its side effects, was initiated at the Merck Research Laboratories. The result of that intensive laboratory search, rigidly tested under practical field conditions, is now available to the members of the poultry industry. That product—a proud companion to S.Q.® and NICARB—is GLYCAMIDE.

**Continuing leadership in coccidiosis control**—If you have used or recommended S.Q. or NICARB you already know of the Merck assurance of quality that stands behind these time-tested products. With the same assurance you may now specify GLYCAMIDE for chicks of all ages! GLYCAMIDE is the most potent drug ever developed for the prevention of coccidiosis outbreaks. It is also one of the safest drugs of its kind. Fed at recommended levels, it will not interfere with subsequent fertility, hatchability, eggshell pigmentation or internal egg quality. However, GLYCAMIDE is not currently recommended for birds in production. Merck & Co., Inc., Chemical Division, Rahway, N. J.

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***Choose the coccidiostat that suits your needs**—NICARB—for broilers—S.Q. for turkeys—and GLYCAMIDE—for broilers, and replacement chicks for laying and breeding flocks.*

*Research and Production for Better Poultry Health and Nutrition*

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## APHF Reports Surge of Interest In Started Pullets

KANSAS CITY—Started pullets—12 to 16 weeks old—have become the hottest innovation in the production of egg-type chicks since chick sexing came on the scene in 1933, according to the official publication of the American Poultry & Hatchery Federation, the American Hatchery News.

An outgrowth originally of the cage laying flock enterprises when cage operators needed replacements to maintain flock size, it has gained even more acceptance within the last 18 months from operators of large scale laying flocks, says Don Turnbull, federation secretary and editor of the paper. It is reported to be growing in popularity in the West, South, East and Midwest.

By devoting all their energies and facilities toward management of flocks in or nearing production, laying flock owners anticipate greater efficiencies. Buildings and time formerly utilized for the brooding periods are channeled into production.

Key to the success of a started pullet program for hatcheries, the publication points out, lies in the ability to provide proper management of birds during the brooding stages. Additional problems are when, where and how to vaccinate, credit, land facilities and extent of product liability when newly-transferred pullets develop afflictions.

According to the article, several prominent feed manufacturers either have or are laying broad-scale plans for promoting started pullets. The large franchise breeders are reported to be making nation-wide surveys as well.

As a result of this reported surge of interest in the started pullets, the APHF is planning to make the subject a major convention topic on the program for the 1958 APHF Poultry Congress and Exposition in Cleveland, July 22-24. Phases to be discussed are to include growing, financing, vaccination, sales and delivery.

Mr. Turnbull, in a second reference to the development, said, "The sale of these pullets is catching on like mad. You (hatcherymen) may not want to get into this business, but on the other hand your customers may not leave you much of a choice. The development is big—and loaded with danger for the novice."

## New Farm Supply Store Opens in Texas

BIG SPRING, TEXAS—A big, new farm store has recently been opened by the Kimbell Milling Co. Housed in a 45 by 150-ft. corrugated iron building, the store is unique to this area because it has no windows. There are three large doors at the front, rear and one side, but not a window in the place. The light comes through several large translucent sheets of roofing made of strong plastic.

The store is handling a full line of fertilizers, insecticides and other agricultural chemicals. In addition, garden supplies and other products for the farm and home are being stocked.

"The feed industry is changing fast," said Ray Winans, manager, "and we must give greater service and try harder to reach more customers. Also the town trade is something the dealer can no longer ignore. I've noticed the sale of lawn and garden supplies is increasing every year."

Heretofore the company had handled feed and allied lines exclusively. This is its first venture into farm chemicals.

## PURDUE WILL SPONSOR POULTRY CLINIC

**LAFAYETTE, IND.—A two-day poultry servicemen's clinic will be held June 19-20 at Purdue University, according to Dr. J. Holmes Martin, head of the poultry science department at the university. It will be the first such meeting in the Midwest, the university said. Registration will start at 9 a.m., June 19, in the livestock pavilion, immediately south of the poultry building. Clinic sessions will be in Room 108, Smith Hall. Latest developments in the care, management, feeding practices and disease control of poultry will be discussed. A highlight of the clinic will be a Chick-N-Que dinner at 6:30 p.m., June 19. Dean Earl L. Butz, director of agricultural activities at Purdue, will discuss "Working With Industry."**

## Korea Authorized to Finance U.S. Sorghum

WASHINGTON—The U.S. Department of Agriculture has announced issuance of an authorization to Korea to finance the purchase of $2.1 million worth of grain sorghums from U.S. suppliers under Title I of Public Law 480.

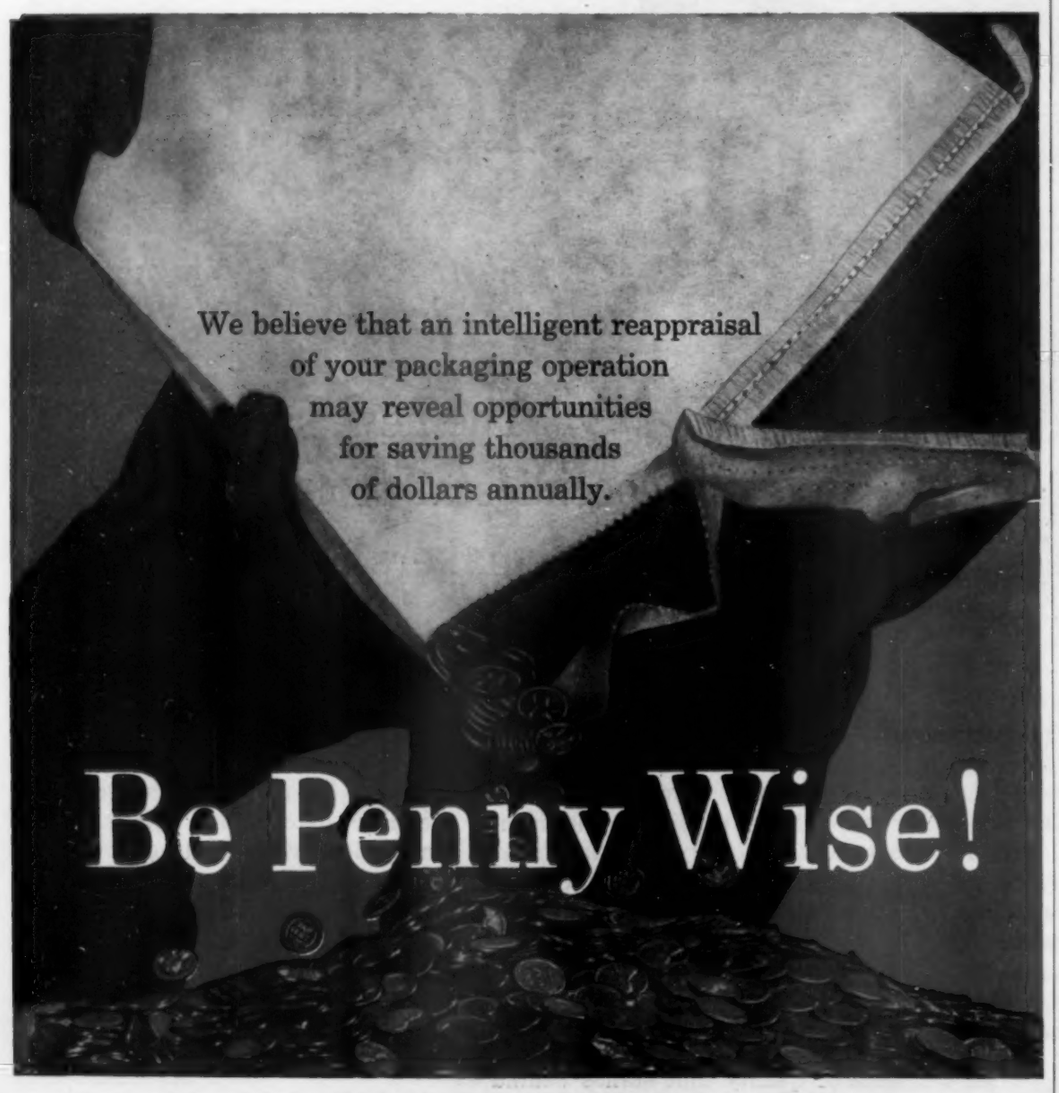
Authorization No. 24-23 provides for purchase of about 50,000 metric tons of yellow grain sorghums, subclass (a) yellow milo, in bulk, Grade U.S. No. 2 or better. Sorghums exported must have been grown in the continental U.S.

Sales contracts between suppliers and importers made from May 9-Aug. 30, 1958, will be eligible for financing. Delivery will be to importer f.o.b. vessel, U.S. ports. Shipment from U.S. ports may be made between May 9-Nov. 30, 1958.

Purchases of the grain sorghums will be made by the Office of Supply, Republic of Korea, (OSROK), Seoul, Korea. Further information may be obtained from the foreign trade programs division, Foreign Agricultural Service, U.S. Department of Agriculture, Washington 25, D.C. (Anyone interested should refer to press release No. USDA 1222-58.)

### AUBURN FIRM TO BUILD

AUBURN, WASH.—The Auburn Packing Co. has been given the approval of the Grant County commissioners to construct a $72,000 feed yard. The application specified that 14 cattle-loading sheds would be constructed.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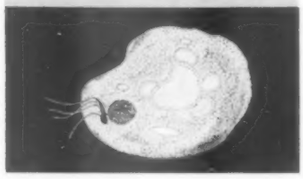
# SERVICE BULLETIN

for members of the feed and poultry industries

## Blackhead in chickens

▶ **REPORTS** of blackhead in chickens have been increasing during the past few years. Caused by the protozoan parasite, *Histomonas meleagridis*, blackhead, while still primarily a disease of turkeys, is capable of causing heavy losses in broilers, replacement chicks and layers.

Histomonas meleagridis, the protozoan parasite responsible for blackhead in both chickens and turkeys.



▶ **OUTBREAKS** of blackhead in chickens are more apt to occur in flocks weakened by stress conditions such as vaccination, overcrowding, damp, drafty quarters, sudden and extreme changes in the weather, and exposure to grossly contaminated range, litter or dirt floors.

▶ **TRANSMISSION** of the blackhead organisms occurs primarily through the infected, embryonated eggs of the cecal worm *(Heterakis gallinae)*.

The embryonated eggs of the common cecal worm are capable of transmitting blackhead to susceptible chicken or turkey flocks.

▶ **BIRDS** swallowing large numbers of infected heterakis eggs may "break" with serious symptoms of disease. These eggs, under suitable conditions, can survive for one to three years in contaminated soil.

Blackhead also may be spread directly from infected to susceptible birds by means of contaminated droppings. *Diseased chickens serve as a reservoir of infection for other birds on the farm and particularly for young turkey poults.*

Some research men feel that the invasion of the cecal wall by these worms and the resultant damage breaks down host resistance and permits invasion of the body by the blackhead organisms.

▶ **SYMPTOMS** of blackhead include drowsiness, weakness, and loss of appetite. Affected birds lose weight rapidly. Yellowish-brown, foamy droppings are passed.

▶ **POSTMORTEM EXAMINATION** may reveal the following lesions:

(a) *Swollen ceca*—marked with open sores or ulcers;

(b) *Cecal core*—(dry, hard or with a cheesy consistency resembling cecal coccidiosis lesions);

(c) *Peritonitis*—(thick, yellow coving of the abdominal wall or intestines) should cecal wall be perforated;

(d) *Swollen liver*—marked by yellowish, depressed areas, but not as severe as blackhead lesions in turkeys.

▶ **DIAGNOSIS** of blackhead, based on liver or cecal lesions alone, is a difficult, if not impossible task. The postmortem picture may be confused with that of *fowl cholera, avian hepatitis*, or *cecal coccidiosis*. It is advisable, therefore, to submit specimens (sick birds as well as a few dead ones) to a diagnostic laboratory. Microscopic examination of tissues and identification of the causative organisms will help confirm the diagnosis.

▶ **TREATMENT** of blackhead in chickens has, in the past, posed some problems that made the potential cure almost as bad as the disease. This was because available drugs that could control blackhead losses also interfered with growth, feed consumption, egg production, fertility and hatchability. However, intensive screening of drugs at the Merck Research Laboratories finally resulted in the new compound nithiazide (marketed under the trademark HEPZIDE®). It was demonstrated that HEPZIDE, when placed in the drinking water, could reduce mortality and check outbreaks of blackhead in chickens *(with no side effects)* in 2 to 5 days, with treated flocks returning to normal in less than a week. According to numerous field observations made during active outbreaks of the disease, the use of water medicated with HEPZIDE helped to stimulate maximum feed consumption. Affected birds maintained normal weight gains during and following the treatment period.

▶ **PREVENTION** of blackhead outbreaks is dependent on correction of the predisposing conditions that weaken the flock's resistance to disease. Particular attention should be paid to minimizing setbacks at the time of fowl pox, Newcastle or bronchitic vaccination. The use of prophylactic levels of HEPZIDE in the rations of susceptible flocks has been demonstrated, with success, even on farms where blackhead was a serious problem during the normal vaccination period or at other times of stress.

®TRADEMARK OF MERCK & CO., INC., FOR NITHIAZIDE.

Prepared for the members of the feed and poultry industries in the interest of poultry health. Merck & Co., Inc., Chemical Division, Rahway, New Jersey.

*Reprints of this article, and others in the series of Service Bulletins, are available on request.*

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# ✓✓Double Check

## Critical B Vitamin Levels in your

# Chick Starter Rations

Modern broiler and chick starter rations with their high energy levels can jeopardize essential B vitamin intake two crucial ways. High energy ingredients like corn, fats, etc. are poor sources of B vitamins; at the same time the high energy content of these feeds decreases total feed consumption.

Since vitamin deficiencies rarely occur singly, and since natural foods vary in vitamin content, it's clearly good business to double check all B vitamin levels every time you change your formula or source of supply.

And don't forget to specify Merck Vitamin Mixtures because uniform vitamin dispersion is absolutely essential if every chick is to get the vitamins necessary to metabolize the increased calories.

| Vitamin | Level for broiler starter (gm./ton) | Level for chick starter (gm./ton) |
|---|---|---|
| **Riboflavin** | 5 | 5 |
| **Calcium Pantothenate** | 14 | 14 |
| **Niacin** | 35 | 30 |
| **Choline Chloride** | 1200 | 1200 |
| **Vitamin $B_{12}$** (additional fortification) (mg./ton) | 12 | 6 |

## Ask the Merck Man

Technical information concerning microingredients is vital for the profitable use of these spark plugs for modern feeds. Yet scientific data on both nutritional and therapeutic microingredients are often hard to get, hard to find or so complex as to limit ready application. You can save time and make this essential information more usable by relying on your Merck Man. With one of the largest libraries, research groups and technical service staffs in the industry to draw on, Merck literature ranges from such diverse items as the recent monograph on "Procaine Penicillin"—surveying the use of this antibiotic in nutrition, disease, and stress—to the newsy Merck Agricultural Memo especially developed to keep feed executives up to date on recent scientific findings.

*Research and Production for Better Poultry and Animal Nutrition*

MERCK

**VITAMIN MIXTURES and VITAMINS**

MERCK & CO., INC., Chemical Division, Rahway, N. J.

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# Wayne Dealers are Tonnage Leaders

## BECAUSE WAYNE FEEDERS ARE

# Winners

**RESERVE GRAND CHAMPION AYRSHIRE COW**

The Masonic Home Farms at Elizabethtown, Roy Boutwell, Herdsman, showed this Champion. This farm entered nine head of Ayrshires which won fourteen ribbons. Their milking ration is made up of Wayne 32% Dairy Supplement and Wayne Sweet Bulky.

**FIRST PLACE BERKSHIRE**
*(Vocational Class)*

Gerald Dotterer, Brookview Farms, Lenhartsville, showed this winning gilt. The Dotterers have used Wayne Feeds for 20 years. Says Gerald, "We have the second highest number of qualified Berkshire litters in Production Registry in Pennsylvania. We are proud of this and feel it speaks well for our meat type hogs and Wayne Feeds."

**GRAND CHAMPION CHESTER WHITE**

Woodrow Walbert, Old Furnace Farm, Alburtis, is shown with his Champion Female, Quibilee the 3rd. This gilt was also first in the senior class. Wayne Sow and Pig Supplement, Wayne Calfnip Milk Replacer, Wayne Tail Curler, and Wayne Hog Balancer are the feeds used on this farm. Woodrow buys his feed from Earl A. Walbert, a Wayne Dealer for 30 years at Mertztown.

**ANOTHER PENNSYLVANIA WAYNE-FED WINNER**

George and Leo Graybill, McAlisterville, show their Leghorn Champions. Graybill Leghorns received the 1957 Poultry Tribune trophy for having highest average production among all breeders entering five or more pens in standard egg-laying contests. They won first in Pennsylvania, and first and third in New York. They have fed Wayne 17 years and recommend it for its high quality and good egg production.

**GRAND CHAMPION CORNISH MALE**

In the Poultry Department, Harry Aurand, McClure, showed a Standard White Cornish Male that was named Grand Champion of the Show. This is the third year Mr. Aurand has won a championship at the Farm Show. He purchases Wayne from the Maitland Roller Mill, Lewistown.

At the 1958 Pennsylvania Farm Show, Wayne Feeders walked away with enough top honors to prove beyond any shadow of a doubt that Wayne Feeds will do a winning job in the show ring as well as in the feedlot. Livestock and poultry raisers are consistently producing top results with Wayne Feeds year after year.

Allied Mills, Inc., makers of Wayne Feeds, take great honor in presenting some of the outstanding winners of this year's Pennsylvania Farm Show.

**GRAND CHAMPION STEER**

Lee Sweigard, Halifax, is shown with his Polled Hereford which was the Grand Champion Steer at the 1958 show. This 1,035 pound steer brought $2.02½ per pound for a total of $2,095.87½, *the highest amount ever paid in a Pennsylvania Farm Show.* Lee started the steer on Wayne Calf Starter and Wayne Fitting Ration, fattened on Wayne Sweet Mix Pellets, Fitting Ration, corn, and barley. Lee's Wayne Feeds come from his uncle, William Sweigard, Jr., a 13-year Wayne Dealer at Halifax.

**GRAND CHAMPION JERSEY COW**

Meryl Sheaffer, Huntsdale Stock Farms, R.D. 4, Carlisle, is shown with the junior yearling that was Grand Champion. She was also Junior Champion in the open class and Grand Champion in the 4-H Class. She is a 4-H animal which was shown and is owned by Mr. Sheaffer's daughter, Margaret. This was the first time in the history of the Farm Show that a heifer was both 4-H Champion and Grand Champion of the breed.

**GRAND CHAMPION JERSEY BULL**

The Huntsdale Stock Farms also showed the Grand Champion Jersey Bull at the Farm Show. Meryl Sheaffer is shown here with the Champion which was also judged first prize senior yearling and junior champion. Mr. Sheaffer has been feeding Wayne for 17 years. He Uses Wayne Calfnip, Wayne Calf Starter, Wayne Calf Supplement, Wayne Sweet Mix and Wayne 32% Dairy Supplement. Eberly's Wayne Feed Supply at Carlisle is his dealer.

**MERYL SHEAFFER'S JERSEYS WIN MANY OTHER HIGH AWARDS**

Besides the two Grand Champion Jerseys, Huntsdale Stock Farms showed a two-year-old cow that was Senior Champion Jersey in the open class, first prize in both open and 4-H class, and second place in fitting and showing. This two-year-old is also owned and was shown by Margaret Sheaffer. These two cows, the Grand Champion and the Senior Champion, placed above two past Grand Champions in the 4-H class and above two past Grand Champions in the open class. In addition, Mr. Sheaffer's Jerseys won eleven 1st prizes, four 2nd prizes, three 3rd prizes, two 4th prizes, one 5th, and one 6th prize.

**Ask us how you can join forces with the**

*Brand in Demand*

**write**

**WAYNE FEEDS**

**Service Offices: Fort Wayne 1, Indiana**

# EVEN BETTER THAN CLAIMED

## DR. SALSBURY'S

# 3-Nitro®

## FOR SUPERIOR HOG FEEDS

- **Reduces Backfat**
- **Stimulates Growth**
- **Improves Feed Efficiency**

It's no new experience for us to find that field tests prove our products better than our conservative claims but new, impartial data on the performance of 3-NITRO in hog feeds is of such significance that it has become *"the most important swine nutrition news in years."*

Now, new reports from Iowa State College indicate that feed containing 3-NITRO not only stimulates fast, thrifty gains *but puts more solid, lean meat on hogs!* Tests reported at Iowa Swine Feeders Day, Feb. 19th, show hogs on 3-NITRO actually gained weight faster . . . *with 7 to 9% less backfat!*

### EQUALS 2-3 YEARS OF SELECTIVE BREEDING

This new report not only bears out earlier tests at Iowa State which showed 3-NITRO stimulated 16% faster gains with 5% better feed efficiency . . . it indicated 3-NITRO apparently reduces backfat on a basis comparable to 2 to 3 years of selective breeding!

We'll be glad to give you the additional, detailed data to further acquaint you with the outstanding profit benefits that can accrue to both you and your customers through feeds containing 3-NITRO. Write, wire or phone today for prompt attention to any questions you may have.

FEED PRODUCTS DIVISION
**DR. SALSBURY'S LABORATORIES**
Charles City, Iowa

Dr. SALSBURY'S

**nation-wide service to the feed industry**

## Buckeye to Expand Soybean Operations At Raleigh Plant

RALEIGH, N.C.—Expansion of its soybean processing operations at its plant here has been announced by the Buckeye Cotton Oil Division of the Buckeye Cellulose Corp.

Buckeye said its plans called for immediate construction of a soybean processing unit using modern solvent extraction methods. Completion of the unit is expected in early 1959.

The new unit will have an annual capacity of 100,000 tons of soybeans and will be constructed on plant property. Capacity will be readily expandable if conditions justify in future years. Plans also call for construction of additional storage facilities for soybeans.

When completed, the new facilities will enable the Raleigh plant to process soybeans and cottonseed simultaneously. Buckeye began its cottonseed processing here in 1927. The plant currently has 40 employees.

A Buckeye spokesman said the expansion was prompted by the extensive development of soybeans as a major crop in North Carolina plus the increasing demand for soybean meal by mixed feed manufacturers.

Raleigh is one of 14 oil mill locations of the Buckeye Cellulose Corp.

## Foxbilt Holds School For New Salesmen

DES MOINES—Foxbilt, Inc., Des Moines, recently conducted a sales training school for 60 new members of the firm's sales staff.

The school is conducted by members of the home office sales staff as well as the company's nutrition and research departments. Instructors for the school were Chuck Bayles, poultry nutritionist; Dave Peck, vice president in advertising and sales promotions manager; Wayne Fox, vice president in charge of ruminant sales; Ken Lepley, vice president and director of sales; Wayne Stepp and Bert Nolin, regional sales managers; Wally Boutott, dairy service director, and LeRoy Hanson, animal nutritionist.

## *Prater Contributes Mill For Grinding Studies*

MANHATTAN, KANSAS — A 7.5 horsepower hammermill valued at $3,000 has been contributed to the Kansas State College department of flour and feed milling industries by Prater Pulverizer Co., Chicago.

The new mill, located in the feed technology wing of Waters Hall, is being used experimentally to determine such things as how screen area and size of screen affect granulation, to determine effect of the suction fan on granulation and, in comparison, the effect of gravity removal on granulation. The effect of grain moisture content on granulation also is being studied.

Richard Baker and E. P. Farrell, who are making the study, have been working with milo and are just starting on corn. They also will run tests on oats before the project is concluded.

Three widths of hammers are used in the experiment, ⅛ in., 1/16 in., and a grouped set of hammers to regulate fineness of granulation. There also are four sizes of screens used, a 3/32 in., 3/16 in., ⅛ in., and ¼ in. The mill is run at 3600 revolutions per minute.

The mill is loaded to full capacity and checked for rate of production. The researchers noted that the suction fan seems to increase grinding production rate.

They said gravity removal tends to make the mill grind the milo at a coarser texture; however, the fan removal system speeds up the rate of production and therefore makes a finer ground product. The fine screen, a 3/32 in., works to better advantage with the fan system than with the gravity.

To calculate the percentage of fine ground grain, 200 grams of material are used, and this is run over five sieves which separate the coarse from the fine. The amount is then calculated.

*more feedmen read*

FEEDSTUFFS

*than any other magazine in the field*

NOPCO'S NEW MIDWEST PLANT NOW AT YOUR SERVICE!

To meet the ever-increasing demand for Nopco's line of poultry and livestock feed supplements, and particularly our NOPCO-PAK® custom-blended vitamin mixes, we are proud to announce new production facilities at Peoria, Illinois.

NOPCO'S NEW PEORIA PLANT:

- Was designed and engineered completely by Nopco, with know-how developed through years of experience as one of the leading premix manufacturers
- Has been equipped by Nopco with the most modern manufacturing equipment
- Is staffed and supervised by experienced Nopco personnel
- Will employ all the basic materials produced by Nopco
- Is ready to serve you . . . right now

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Producers of Micratized® Vitamins A and D, niacin, calcium pantothenate, choline chloride, Nopco-Paks, and other products

Arbor Acres

Make sure

Your broilers come from

ARBOR ACRES females!

# MERCK milestones in animal health and nutrition through the years of AFMA's progress:

**1930-IODINE PRODUCTS**
Merck pioneered in designing products especially for use by the feed industry more than a quarter of a century ago!

**1934-ASCORBIC ACID** *(Vitamin C)*
Isolated on a laboratory scale from plant sources by Merck chemists—commercially available in 1935.

**1936-THIAMINE** *(Vitamin $B_1$)*
FIRST synthesized in the Merck Laboratories.

**1938-RIBOFLAVIN** *(Vitamin $B_2$)*

**NIACIN and NIACINAMIDE**
Merck scientists were the first to develop a practical, commercial manufacturing process for Riboflavin—now offered in a form suitable for use as a feed additive.
Niacin and Niacinamide made available for use in animal feeds!

**1939-PYRIDOXINE HYDROCHLORIDE** *(Vitamin $B_6$)*
Synthesized by Merck chemists—commercially available in 1940.

**1940-DL-CALCIUM PANTOTHENATE**
Merck first indentified and synthesized this vitamin and offered it commercially!

**1946-STREPTOMYCIN**
This remarkable antibiotic is now offered as soluble granules of streptomycin sulfate and dihydrostreptomycin dust for control of livestock and poultry diseases!
Merck developed the manufacturing process for this drug which has saved the lives of thousands of patients with tuberculosis.

**1948-VITAMIN $B_{12}$**
Merck chemists first discovered the long-sought liver factor essential for the formation of red blood cells. The isolation of this vitamin in pure crystalline form and the development of a manufacturing process, has helped to revolutionize the treatment of various anemias. Vitamin $B_{12}$, shown to promote animal growth, also is available as an animal feed supplement!

**1948-S. Q.®** *(Sulfaquinoxaline)*
Merck personnel first developed S. Q.—the first all-purpose coccidiostat for both the control and prevention of coccidiosis outbreaks!

**1950-SYNTHETIC VITAMIN A**
Palmitate Merck and Synthetic Vitamin A Acetate Merck commercially available.

**1951-PRO-PEN®** *(Procaine Penicillin)*
Merck was granted a patent by the U.S. Government in recognition of their pioneer efforts covering the use of penicillin in feed! This patent is available to feed manufacturers on a royalty-free basis.

**1955-NICARB®** *(Nicarbazin)*
Merck Research Laboratories developed this most effective coccidiostat for continuous preventive feeding of broilers—tried, tested and proved on over three billion birds!

**1956-PRO-STREP®** *(Merck brand for an antibiotic feed supplement)*
Merck developed this combination of procaine penicillin and streptomycin sulfate as a low-cost antibiotic feed supplement with "broad-spectrum", dual-action effectiveness.

**AND NOW in 1958**
**GLYCAMIDE™** *(Glycarbylamide)*
A result of screening over 3,000 compounds since the discovery of nicarbazin, GLYCAMIDE is the safest and most efficient coccidiostat to be offered for chicks of all ages.

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MEMBER AMERICAN FEED afma MANUFACTURERS ASSOCIATION INC.

# To the American Feed Manufacturers Association on its 50th anniversary

# ATULATIONS

**for your numerous achievements in research and quality control, a record of continuous achievements in better nutrition and outstanding service to the American Farmer.**

Your contributions have helped our livestock and poultry farmers raise healthier, more productive livestock units to make this country the best-fed nation in the world. You have earned—and should be proud of—the record of confidence that you have created during the last 50 years.

MERCK & CO., INC.
CHEMICAL DIVISION
RAHWAY, NEW JERSEY

# Let's Team Up for the Golden Year

## It's the Feed Man's Golden Opportunity To Build Good Will with His Customers

By Richard L. Kathe
Director of Public Relations
American Feed Manufacturers Assn.

Richard L. Kathe

This year can mean a lot for you if you're in the feed industry!

This can be your "golden opportunity" to establish some good will with your customers—whether you're a feed manufacturer, a dealer or a supplier of ingredients or services. For this is the year when all of our industry is celebrating a birthday.

True, it is the 50th birthday of the American Feed Manufacturers Assn. But, since there is no definite date at which the feed industry was truly born, this anniversary is probably the best of any available for all to celebrate in a big way.

The occasion is ready made. What could be a better time? We have a chance to focus attention of all agriculture, and the nation as a whole, upon tremendous contributions made by the feed industry to production of meat, milk and eggs.

When two or more people are closely associated for 50 years, their anniversary is a time for great joy, and causes them to reflect on the past. But then, and probably most important, they look forward to an even more golden future.

So it was that the AFMA decided something big must be done—that our industry could properly bask in warm reflections of history while looking toward the golden sun rising on our future.

Responsibility for planning such an undertaking is no small task. Last summer, the AFMA board appointed four strong committees. Members of each were outstanding men and deserve great credit for the part they played in the Golden Convention.

### Public Relations Group

However, this article is concerned with activities designed by one of these groups, the Golden Convention Public Relations Committee. For it was their ideas which will help you celebrate the coming year. Perhaps this part of the story might better be known as "The Seven Busy Men," for their work was of yeoman proportions.

"To devise methods for celebrating the Golden Convention and the Golden Year which follows"—that was the assignment handed the committee. And so, the call went out for specialists in the industry, men who knew celebrations, and most particularly, good public relations.

### Opportunities for Special Events

It was obvious from the start that the usual pattern of celebrations could be followed to advantage by members of the feed industry during the Golden Year, May, 1958, through April, 1959. These events should be conducted by individual companies, members of AFMA, and could include:

- "Open House" days and tours of plants.
- Testimonial dinners given by local business groups on behalf of feed industry home offices, plants and dealers.
- Testimonial dinners given by feed companies, etc., for "old-timer" employees.
- Scholarships presented to deserving youth have a way of looking forward to the next 50 years.
- Essay contests among high school student on "Feed Industry Contributions to Animal Agriculture in the 50 Golden Years."

However, it was realized that AFMA should provide something visual to tie these events together. The old AFMA seal was hard to identify, particularly when reduced to small sizes.

### "Trade Mark" Adopted

Art departments of all seven companies represented on the committee submitted many original ideas. Forty-seven designs and three meetings later, the "trade mark" idea in Figure 1 was approved.

Next, the "trade mark" was incorporated into an official seal which members could imprint on their company stationery and other materials to be identified with AFMA membership. (See Figure 2.)

The same art work was utilized in step 3 for production of a 50-year emblem. (See Figure 3.) This will be reproduced as black and gold stickers and provided to AFMA members following the convention. They will be sold at a nominal price in quantity lots to those who want to affix stickers to stationery, invoices or other mailing pieces.

The last two designs mentioned above are extremely useful for members to reproduce in advertising page layouts for feed trade publications, agricultural magazines, newspapers, billboards, direct mail pieces and similar media. The impact of many advertisers using the same design throughout the Golden Year will call attention of all agriculture and the feed industry to celebrating the "Golden Age of Feeding."

Finally, these designs were incorporated into all AFMA bulletins, news releases, stationery, and other printed pieces. For example, see the reproduction of a letterhead in Figure 4.

Then, the committee contacted each of the leading feed trade publications, asking editors what they might do to focus attention upon the Golden Year. Many editors proposed excellent programs. Feedstuffs, for example, will publish a series of monthly articles summarizing 50 years of development and future trends in the feed industry and nutrition research and feeding results. These articles will be rewritten for release to agricultural magazines and again for radio farm directors. Nearly 800 of these editors will be sent such stories during the next 12 months. The weight of this "written and spoken word" upon the nation's farming public should have a very beneficial public relations effect.

The next assignment was to "add luster" to AFMA's normal convention pattern. The 50th annual meeting, May 21-23, was to be "something special."

Most public relations men are "lukewarm" to banquets, to say the

Figure 2

MEMBER AMERICAN FEED afma MANUFACTURERS ASSOCIATION INC.

**PUBLIC RELATIONS COMMITTEE—This group was given the assignment of "devising methods for celebrating the Golden Convention and the Golden Year which follows." The men are members of the AFMA's Golden Convention public relations committee. Seated around the table (from left to right starting with man with back to camera) are John McGinty, Ralston Purina Co.; George Soule, Du Pont Company; Steve Bromley, American Cyanamid Co.; E. C. Holcombe, Borden Co.; Fred Manley, Klau-Van Pietersom-Dunlap advertising agency; Richard Kathe, AFMA; Dr. J. L. Krider, Central Soya Co. and McMillen Feed Mills (chairman), and Fred Manley, Chas. Pfizer & Co.**

Figure 1

afma

to balance your high-

DU PONT

write:

E. I. du Pont de Nemours & Co. (Inc.)
Grasselli Chemicals Department, Animal Industry & Nutrition Section, Wilmington, Delaware

Atlanta 8, Ga.,
739 W. Peachtree St.

Cleveland 14, Ohio,
1321 Nat'l City Bank Bldg.

**STEERING COMMITTEE — These industry leaders made up the AFMA's Golden Convention steering committee. Left to right are J. D. Sykes, Ralston Purina Co., St. Louis; D. K. Webster, Jr., H. K. Webster Co., Lawrence, Mass.; Oscar Straube, Pay Way Feed Mills, Kansas City (chairman of the committee and chairman of the AFMA board); W. E. Glennon, AFMA president, and Fred W. Thomas, Ft. Wayne, Ind.**

least. Yet, this was their first recommendation. Because this was the Golden Jubilee meeting of AFMA, a banquet was needed for a particular reason. A banquet could provide the right vehicle for a gala evening of entertainment and the setting for an outstanding historical reflection on the golden past.

It must be a fast-moving program, however — a drastic departure from the conventional, slow affairs so often forced upon tired conventioneers.

After many meetings and a file

**Figure 3**

50 YEARS OF afma SERVICE
AMERICAN FEED MFRS. ASSN.

cabinet of correspondence, a concept was agreed upon and a producer selected. The dramatic presentation, "The Golden Book," produced by Music Corporation of America at the Golden Banquet Thursday evening, May 22, will capsule 50 years of AFMA, industry and agriculture history into 45 entertaining minutes—complete with music, lights, action and a New York and Chicago professional cast.

The committee went one step further suggesting a very high caliber musical entertainer to climax the eventful night. The top star of the Metropolitan Opera, Robert Merrill, was engaged.

The Golden Convention Public Relations Committee then turned its attention to other features which lend interest to the annual meeting. Knowing of the desire to reminisce of past glories and speculate as to what the future may hold in store, the committee next developed the idea for a "Street of Golden Memories" and a "Street of Golden Opportunities." These "real streets" will hold 188 scenes, both old and new, and be open for strollers throughout the convention.

**Demonstrations**

Finally, the committee concentrated on the official convention program. The need for agricultural press coverage to a greater extent than ever before, was recognized. Editors would need special activities which could be photographed, recorded and filmed to interest farm readers, viewers and listeners. Thus, it was suggested to the AFMA Nutrition Council that a series of livestock and poultry demonstrations be conducted to show progress in nutrition over the past 50 years, as well as trends for the future. The feature "From Feed to Food" is the result.

Following the same theme, the public relations men worked with the Convention Program Committee when the latter group suggested a farm magazine editor discussion of contract agriculture. The two groups worked together to develop this Friday morning convention feature into its final form.

At this point you might wonder who these "Seven Busy Men" are and

**Figure 4**

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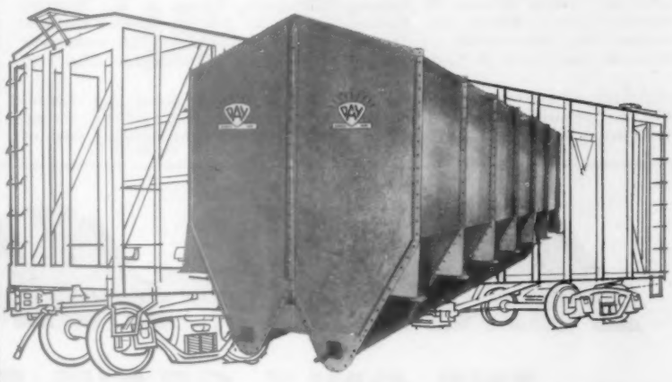
DAY
BULK STORAGE NEWS



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DAY tanks are large enough to actually store a carload or more of material in a single tank. They may be pneumatically or mechanically loaded and emptied. Made in vertical and horizontal styles, DAY tanks are built and shipped in easily erected sections. They have been proven in a wide range of applications. They are sturdily constructed of galvanized, black or stainless steels or aluminum.

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**PROGRAM COMMITTEE — Here's the group responsible for planning the program of the Golden Convention of the American Feed Manufacturers Assn., being held May 21-23 in Chicago. Program committee members, left to right, are Austin Brooks, El Rancho Milling Co., Clovis, N. M.; Maurice Johnson, Staley Milling Co., Kansas City; Ellis English, Archer-Daniels-Midland Co., Minneapolis (chairman); W. T. Diamond, AFMA secretary-treasurer, and Dr. R. R. Spitzer, Murphy Products Co., Burlington, Wis.**

what type of souls they might be to work so unselfishly and well on so many projects.

All of the seven had two characteristics in common — they earned their living in the general field of public relations, advertising and sales promotion, and they are "tops" in their field. As of the fall of 1957, they had each arrived in this same area of work, but by much different routes. How they got there is almost as intriguing as the men themselves.

A Marine wounded at Guadalcanal . . . a banker and lawyer . . . a scientist and teacher . . . a marketing analyst . . an economic analyst . . and an investment counselor. Public Relations men!

The Marine probably wouldn't have been at Guadalcanal nine months after Pearl Harbor if he hadn't trained at Culver Military Academy. He finished the war with the Marines, then settled down to the peaceful existence of a sports editor on a small town newspaper, was a salesman "here, there and everywhere," and joined American Cyanamid Co.'s public relations staff in 1950. Today, Steve Bromley is their top-flight advertising manager of the Agricultural Division.

A member of the Missouri Bar Assn., and manager of the closing division of the Federal Land Bank of St. Louis, turned to the publishing field 14 years ago. He edited a dealer publication, a sales publication, was named manager of the publications department, then manager of dealer promotion. Today, John McGinty, 14-year veteran of Ralston Purina's organization is their sales promotion manager.

One of the nation's outstanding college research scientists in animal agriculture of a decade ago, who rose from assistant professor to head of his division in seven short years, winner of AFMA's $1,000 research award, and member of scientific and honorary fraternities, turned to feed industry research in 1950. His ability with men and ideas was recognized to equal his fine scientific techniques and training. The following year he was named director of sales, and today, Dr. J. L. Krider is vice president and director of public relations for Central Soya Co.

A radio announcer and advertising man, who liked agriculture better than any other subject, turned feed salesman two decades ago. In ten years he rose to general sales manager. Along the way, he worked in traffic, purchasing and accounting. Today he is a featured speaker before college, industry and civic groups with a strong flair for showmanship and a most likeable personality. Gene Holcombe is the director of advertising and sales promotion for the Borden Co.'s feed division

A graduate of economics at Brown University, and a market analyst, decided 10 years ago thaat advertising was what he most wanted. After working as assistant and advertising manager for two firms in five years, he started with his present employer 4½ years ago. First he was advertising manager of their feed supplement division, and then of their animal health division. Today, Fred Manley is Chas. Pfizer's sales promotion manager.

A job as a Federal Land Bank messenger led another outstanding man to enter the University of Massachusetts, where he graduated with honors in agricultural economics in 1941. He paid his way, writing for the extension service, a newspaper and several farm publications. Work as an economic analyst with USDA was interrupted by World War II. Only the army could have given him such three widely diversified jobs in as many years—a front line combat engineer, agricultural work in Bavaria and a public relations sergeant. Joining Du Pont 10 years ago as an agricultural editor, George Soule is today known as one of the nation's best agricultural public relations men.

A boy from a small Iowa town decided business and finance were his path to a golden future. After a degree from Cornell College and graduate work at Northwestern University, he rose to the position of investment counselor of one of the largest banks in Chicago. The publishing field had its attractions. He served as manager of book sales for one of the largest firms in the world. His varied background also included publicity and public relations work and three years on the staff of the nation's second largest farm magazine. Today, Frank Kouba is especially adapted for his responsible position as vice president in charge of client development for the Klau-Van Pietersom-Dunlap advertising agency.

This, then, has been a story of men and their work. The work is not over, for the Golden Convention Public Relations Committee, with Dr. Krider its capable chairman, will continue to assist AFMA and the industry to celebrate the Golden Year. Their effort can be summed up, "some activity or idea which will best fit into the program of everyone in the feed industry."

Their challenge to you: "Let's Team Up for the Golden Year."


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# Producer and Food Retailer Views on Integration Of Production and Marketing in Agriculture

## PRODUCER

### How Does Integration Affect the Farmer?

By N. A. Wilson
Farm Manager
Rolfe, Iowa

My approach to the subject of swine integration is a critical one. I want to be sure that I am counted on the side of those opposed to speedy acceptance of contract farming. I believe that now, more than at any other time in history, we must constantly be on guard lest we trade our stake in agriculture for a "mess of pottage."

I am certainly not opposed to progress, but I am very much opposed to the loss of my freedom and my right to individual enterprise. I am not in favor of having the government control my business, and I don't intend to sit idly by and twiddle my thumbs while my economic back is being bent by private enterprise, either. No one in any business has the right to talk against government control if he himself is trying to dominate some field.

We should never be lacking in confidence and vision, or be afraid to think and act. That would be the most serious mistake agriculture could make. We should try to weed out the speculative, unsound propositions that are presented to us so that we may preserve stability and healthy progress.

In this rush for bigness, specialization and production madness in our country today, we may be losing sight of some of the basic fundamentals that are the backbone of our nation's greatness. One of these fundamentals, that of preserving individual opportunity to compete, is to me the real challange facing agriculture today.

It would be a sad day for America if all those now engaged in farming knew that they could never expect to get rich. If our modern, scientific economy requires that a farmer be changed to the status of a salaried employee, as advocated by many today, then who is going to provide the

(Turn to PRODUCER, page 86)

*EDITOR'S NOTE: At the recent National Institute of Animal Agriculture, held at Purdue University, speakers on an integration program represented many related interests, from the farmer all the way to the retailer. Among them were Mr. Wilson, a farm manager in Iowa; Mr. Sadd, representing food interests, and Mr. Thomas, agricultural counsel for The Kroger Co. Feed men are well acquainted with views on integration as it directly affects them, but the accompanying articles, taken from talks by these three men at the Institute, will better acquaint feed men with what is being said on either side of their "middle" position in this issue. The role of the feed industry will be influenced a great deal by developments in food marketing, as well as those in food production.*

## FOOD RETAILER

### Impact of Integration on Product Marketing

By C. W. Sadd
Producer and Consumer Family Foods
Syracuse, N.Y.

Marketing farm products, with many, is a complex and mysterious process. It is and it isn't. In total it is because of the vast size of the business. Easily 150 million to 175 million tons of food are consumed each year. This tonnage is not handled just once but several times. Most every item is probably bought and sold three or four times. Maybe more integration would reduce the number of transactions.

**Food Is Bought**

I like to look at marketing more simply by thinking of it as the flow of food from the farm to the consumer's table. There is always a suction on the stream just the same as we have gravity pulling water down hill. Very little food is actually sold; it is bought.

Now let's examine integration on the stream that carries our food to market. Because integration originally took place at the mouth of the stream, let's work upstream.

The first chain food stores came into being around the turn of the century. From the beginning, as soon as a chain had sufficient volume, they took on the dry grocery wholesale operation themselves and almost invariably were willing to operate the

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**In milk replacement formulas, breeder rations and other feeds for swine, cattle and calves,** Brewer's Dried Yeast acts as a growth stimulant, accelerates the rate of gain, improves the utilization of other nutrients and provides the "extras" in time of stress.

**In poultry feeds Brewer's Dried Yeast** improves hatchability and viability, stimulates growth, prevents enlarged hocks in turkeys and certain types of leg weakness in ducks and geese.

**In specialty feeds for dogs, cats, mink, fish and bees** the incorporation of Brewer's Dried Yeast avoids the risk of nutritional deficiencies, promotes proper metabolism, adds appetite appeal and protects against certain types of infections.

The natural anti-oxidant properties of Brewer's Dried Yeast guard the purity, freshness and palatability of flavor-and-oxidation-sensitive feeds and prevent or retard the development of harmful rancidity and thus prolong storage stability. They also protect oxidation-prone vitamins.

**The unique properties of Brewer's Dried Yeast are partly inherent in the strain—Saccharomyces cerevisiae—a "perfect" yeast, and partly due to its matchless growth medium and conditions of fermentation. Because of its high nutritive value, versatility and stability, genuine Brewer's Dried Yeast is favored as a rich source of natural B vitamins and unidentified factors in all types of feed. The tradition of research and experience provides conclusive evidence that it represents a notable ingredient for modern feed formulation. No other yeast expresses so well your insistence on unyielding standards of perfection.**

*Investigate the advantages of Brewer's Dried Yeast*

WRITE FOR COMPLETE INFORMATION TO

Brewers Yeast Council, Inc.

605 N. MICHIGAN AVENUE CHICAGO 11, ILLINOIS

wholesale part of the business without profit. They were satisfied with the usual retail store profit.

**Extent of Integration**

After dry groceries came produce and some semi-perishable dairy products, until today nearly every chain has integrated retail and wholesale on dry groceries, produce and some dairy. Many of the chains have integrated their meat wholesale and no longer use the packer's branch house. Some chains have integrated their operations to include the actual slaughter of animals.

The chains are not the only ones who have integrated. Many independent retail stores, especially the ones with a large supermarket, belong to a co-op wholesale. This is a form of integration.

I'd guess 70% of the retail-wholesale dry grocery business is integrated. Fully one-half of the produce business and maybe 10 to 20% of the meat is integrated.

With 50 years history to look at, we should be able to come to some conclusions on the effect integration has had at the retail-wholesale level of food marketing. Let's consider some of the good things resulting from integration at this level of marketing.

1. Reduced per cent of gross profit per dollar of sales. This helps to narrow the spread between producer and consumer.
2. Reduced per cent of net profit. One net profit instead of two or more.
3. Chains have been profitable and this has allowed an accumulation of capital to provide big stores to accommodate hundreds of new food items.
4. Created opportunities for hundreds of small food processors.
5. Created opportunities for many small grocermen to become big grocermen. Hundreds of independents have grown into small chains.
6. Made thousands of jobs.

Some of the undesirable things possibly resulting from integration are these:

1. Made many people employees instead of business owners.
2. Reduced the opportunities for direct consumer selling.

**Chain Store Trends**

What are some likely trends toward more integration on the part of retailers, both corporate and voluntary chain?

1. More chains will handle their own wholesale meat distribution. In fact, it looks like the chain will fabricate the package part of its meat at its own distribution warehouse where it is now being done at the store level. Part of it will go back to the packing house for fabrication and packaging. It's possible the packing house will service the store direct. It's being done today on some items.
2. More chains will probably operate packing houses. I don't think

(Turn to RETAILER, page 80)

## Chain Store Grocer's Views on Integration

By Merle J. Thomas
Agricultural Counsel
The Kroger Co.
Cincinnati, Ohio

We are all striving to make food products available to the consumer as abundantly and as efficiently as possible. In this effort we have one boss—Mrs. Consumer. The needs and desires of Mrs. Consumer, as translated through her purchases in the supermarket, are the guideposts for the food retailer, the processor and the farmer. It is through efforts to satisfy Mrs. Consumer that we have encouraged the development of vertical integration in agriculture.

The history of integration is like the debate on which came first—the hen or the egg. I believe that the evolution of mass merchandising has been one of the major factors in the growth of integration.

Twenty-five years ago our average store had sales of $47,500. Today our store sales average $1¼ million. And while the size of store and volume of business have grown, there have also been great changes in the way products are merchandised.

**Easier to Buy**

The use of mass displays, prepackaging, new colors and designs, and aggressive advertising have all combined to make it easy for Mrs. Consumer to buy. Built-in maid service and many new product developments, such as prepackaging and frozen foods, have helped us sell more farm products.

The broiler industry often is used as a good example of successful integration. Twenty-five years ago few chickens were sold in our stores. The farmer got more of the consumer's dollar from this bird than from today's cut-up, tray-packed bird, but he certainly didn't sell as many. Ten years ago our store sales of poultry averaged 100 lb. a week. Last year they averaged over 2,000 lb. a week.

**Broiler Sales Climb**

In the last 10 years our broiler sales have increased 813%. Why this tremendous increase? The answer lies in these two samples. The New York dressed chicken was poorly merchandised in limited quantity and of questionable quality. The cut-up, tray-packed bird is of high quality, in plentiful supply, smartly merchandised and ready for the pan. Thanks to research, vertical integration and mass merchandising, we have provided Mrs. Consumer with a food value that is attractive and convenient.

As a food retailer, our job is to provide Mrs. Consumer with as many values as possible. But to sell food and provide values, we must have the products available in quantity, of uniform quality, and from a dependable source of supply. When one of these three prime requirements is not met we think of integrating our operations.

With many farm products a form

Make it Your Policy to obtain

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50 YEARS OF afma SERVICE
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with BREWER'S DRIED YEAST

High Quality Protein
•
Full Complement of Amino Acids
•
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•
Important Minerals
•
Unidentified PLUS Factors
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Natural Anti-Oxidant

Today, owners of dogs look to modern manufactured foods for complete, scientific nutrition for their pets. Research on the dietary requirements of dogs combined with quality ingredients assure them of a variety of complete and balanced rations, adequate to maintain them healthy, alert and productive. Brewer's Dried Yeast in the formula offers nutrition insurance, particularly in the area of those unidentified factors known to be important. Brewer's Dried Yeast helps to avoid the risk of nutritional deficiencies by providing a multitude of essential nutrients in a single, highly digestible ingredient. By increasing appetite appeal, promoting correct metabolism and providing protection against certain types of infection, it imparts qualities which insure a longer, more active life. The natural anti-oxidant properties of Brewer's Dried Yeast guard flavor and palatability and preserve freshness by preventing the development of rancidity. Brewer's Dried Yeast is available in several granulations. Free-flowing, it is easy to mix and economical. Available in ample supplies.

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Write for information and prices
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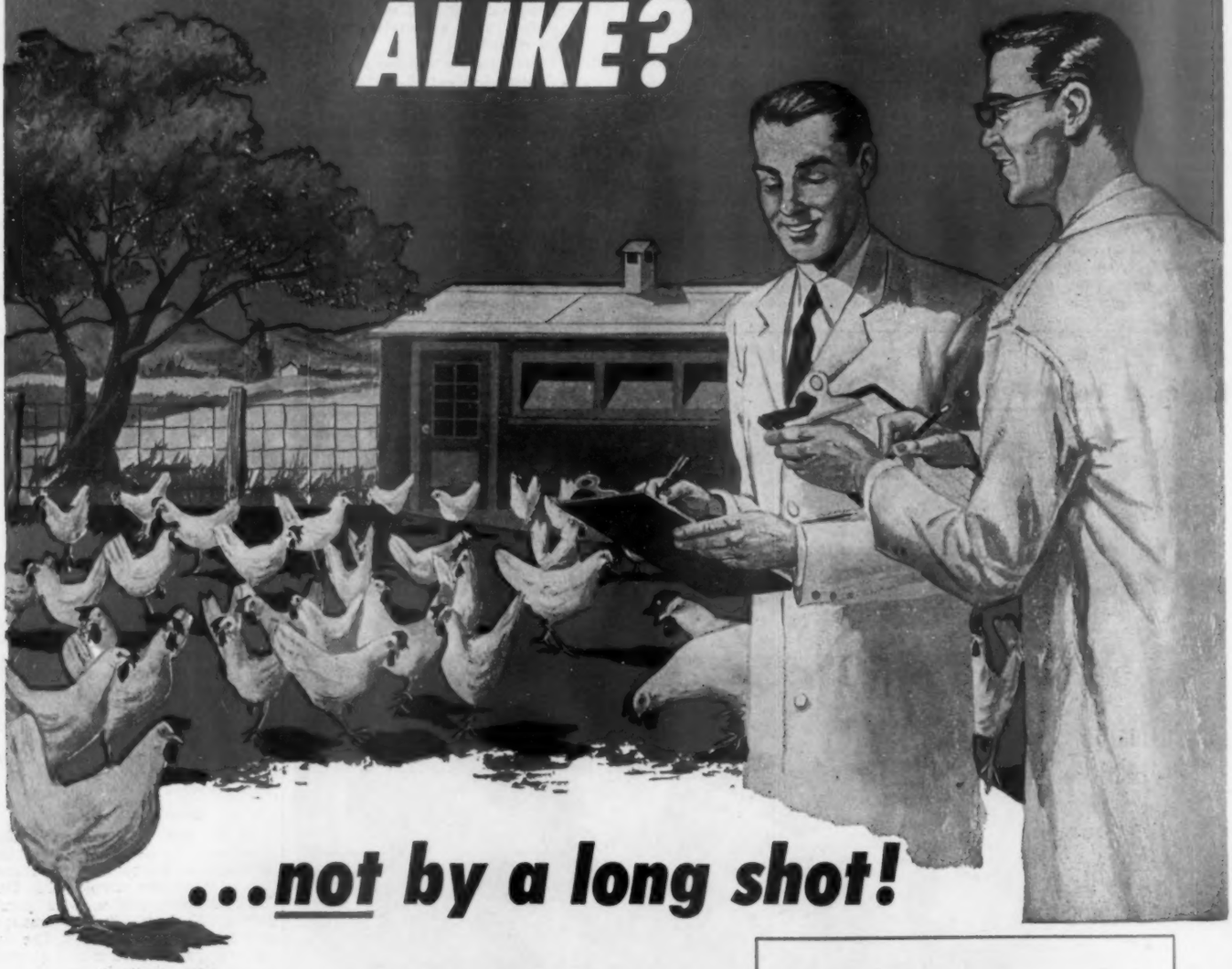
# ARE ALL DEFLUORINATED PHOSPHATES ALIKE?



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*Tested at state experiment stations and research laboratories not affiliated with Coronet.

Nutritional evidence establishing CDP as the *best* defluorinated phosphate is listed below. Literature available upon request.

1. "The Availability of Phosphorus from Different Sources for Poults Fed Purified Diets." *Poultry Science*, Volume XXXIII, Number 5, September, 1954.
2. "A Comparison of the Availability, to the Young Growing Chicken, of the Phosphorus in Defluorinated Phosphate and Analytical Reagent Grade Dicalcium Phosphate," by Lime Crest Research Laboratory, October, 1954.
3. "The Availability of Phosphorus from Different Sources for Poults Fed Practical-type Diets," *Poultry Science*, Volume XXXIV, Number 5, September, 1955.
4. "Phosphorus Availabilities as Determined by New Feeding Experiment," by Lime Crest Research Laboratory, November, 1955.
5. "Phosphorus Availability Assays by the University of Illinois (as presented by Dr. H. M. Scott) Method," by the Laboratory of Vitamin Technology, Inc., September, 1956.

### *Read what a leading nutritionist says about phosphorus availabilities:*

**"The feed nutritionist should be aware that the phosphorus in all phosphorus supplements is not available. The phosphorus supplier should be required to provide data concerning the availability of phosphorus in the supplement. Phosphorus supplements available to the feed trade may range from as low as 23% to as high as 92%. Thus the importance of phosphorus availability is immediately apparent."**

Dr. J. R. Couch, *Formulation of Feeds for Laying Hens*, Feedstuffs, *July 27, 1957, pp. 18-24*

*LET US FIGURE THE COST OF CDP DELIVERED TO YOUR PLANT*

CDP CORONET DEFLUORINATED PHOSPHATE

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of integration has been operating for several years. For example, produce merchandisers in our operating divisions have had an unwritten agreement with certain reliable, local vegetable growers. They supply potatoes, lettuce or some specialty crop in a proper package for the stores in a specific division. In most cases no price guarantee is made before harvest time.

Integration by growers and shippers of fruits and vegetables, along with developments in refrigeration and transportation, has made it possible to bypass terminal markets and buy directly from the grower or his organization. Last year about 72% of our produce purchases were made directly from the growing area with a significant saving to both producer and consumer. Great strides have been made in prepackaging produce at shipping point, but more can be done. If most of the packaging can be done before the product reaches the store, it will enable our store people to spend more time selling and less time in the back room.

**Integration in 1904**

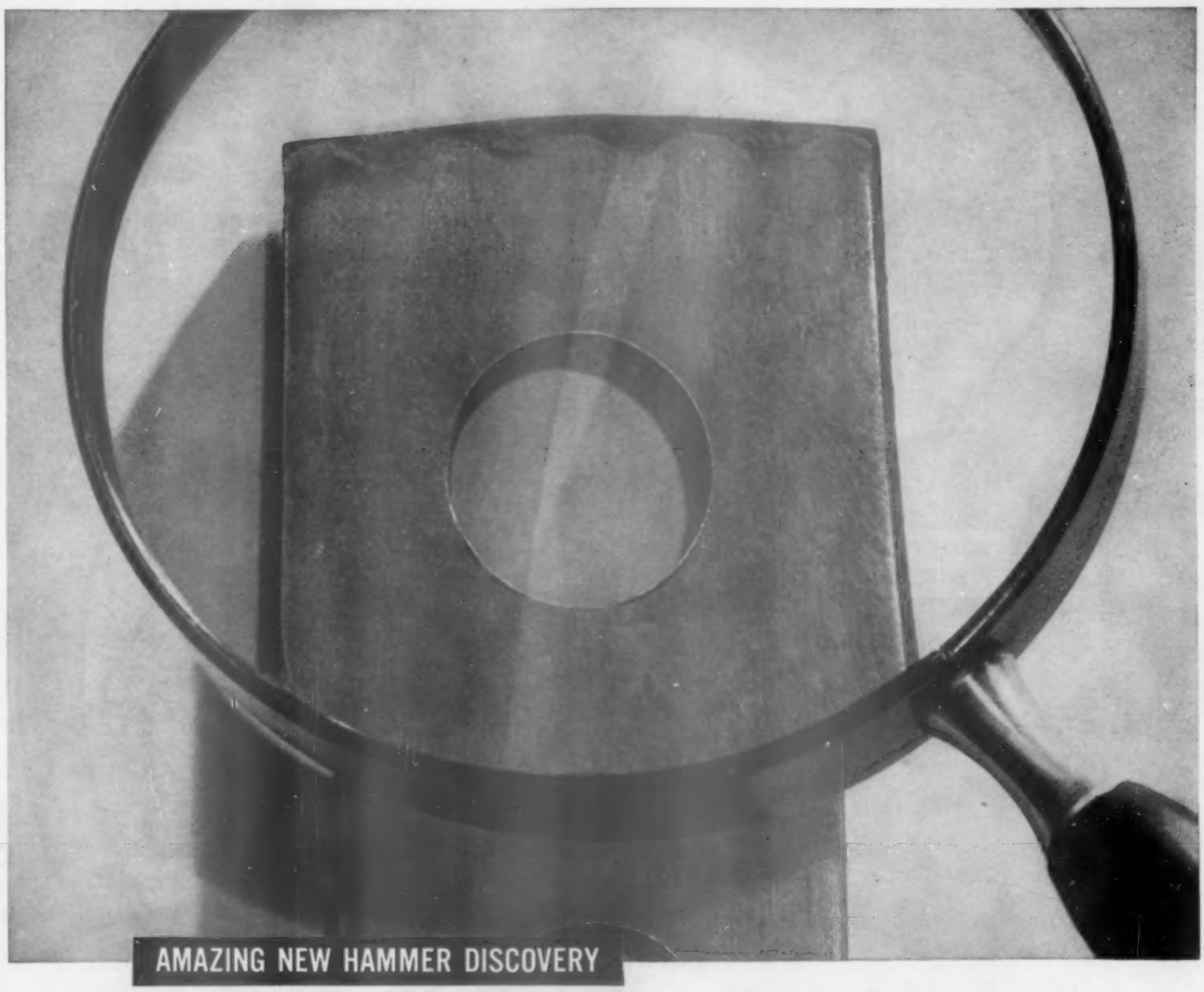
Meat sales account for about one-fourth of Kroger's total business. As the nation's third largest food retailer, we sell about ¾ billion pounds of meat, fish and poultry each year. So-called integration in meats started in Kroger in 1904. That was the year Kroger opened its first meat packing plant in Cincinnati. During the twenties a packing operation was opened in Columbus, Ohio, and during the late thirties plants were opened in Omaha and Scottsbluff, Neb. During World War II we operated feeding yards and even contracted with farmers for cattle.

All of these operations were stopped or sold soon after the war. In other words, just as soon as we could get a dependable supply, of uniform quality, and in the quantity required, we no longer needed our own packing operations. As the packing house representatives know, theirs is a business for specialists, and we decided our meat packing should be in their hands. Today we buy from many packers, both large and small. The only packing operations we now have is a small processing plant in Cincinnati for hams, bacon and sausages.

Flexibility is one of the pre-requisites for efficient food retailing. Our company recently was reorganized to allow for more flexibility in decision-making. Management has been decentralized to give more authority at the operating division level. This means more opportunity to move fast in meeting changing conditions. A retailer following a program of complete integration for his supply of farm products does not have the flexibility so necessary to meet changing conditions in this competitive business.

However, I hasten to add that we

(Continued on page 80)

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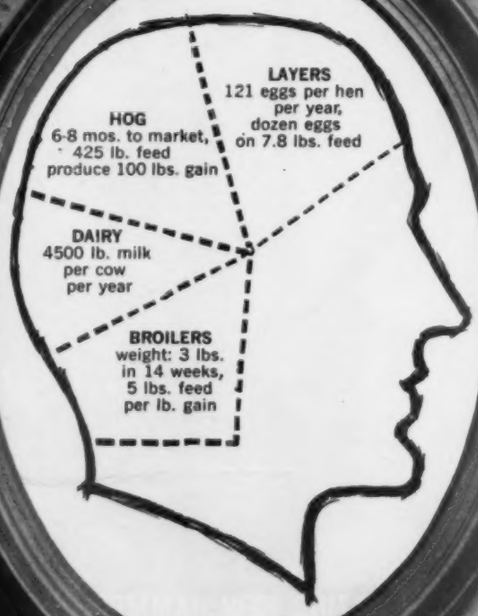
# NOT EVEN DREAMED OF IN '08...

POULTRY AND LIVESTOCK PRODUCER—1908

# UNBELIEVABLE IN THE '30's...


LAYERS
121 eggs per hen per year, dozen eggs on 7.8 lbs. feed
HOG
6-8 mos. to market, 425 lb. feed produce 100 lbs. gain
DAIRY
4500 lb. milk per cow per year
BROILERS
weight: 3 lbs. in 14 weeks, 5 lbs. feed per lb. gain

POULTRY AND LIVESTOCK PRODUCER—1930

50 YEARS OF afma SERVICE
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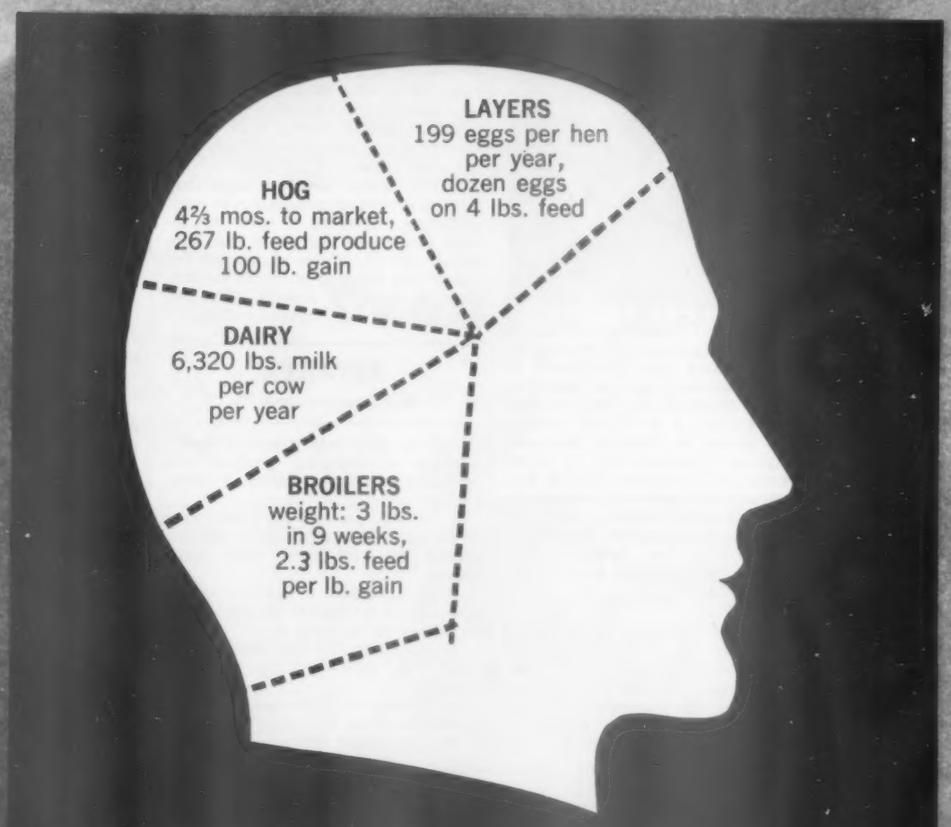
Congratulations AFMA on 50 years of progressive leadership!

# BUT STANDARD IN '58...


LAYERS
199 eggs per hen per year, dozen eggs on 4 lbs. feed
HOG
4⅔ mos. to market, 267 lb. feed produce 100 lb. gain
DAIRY
6,320 lbs. milk per cow per year
BROILERS
weight: 3 lbs. in 9 weeks, 2.3 lbs. feed per lb. gain

thanks to an ever increasing

## FEEDPOWER!

1958 FEEDPOWER is generated by advanced scientific feeds . . . feeds developed through research and proven in the feed lot. They feature efficiency "not even dreamed of 50 years ago" . . . "unbelievable 25 years ago" . . . but standard today!

FEEDPOWER is a dynamic force created by the Feed Manufacturers of America to provide Mr. Livestock and Poultry Producer with a basic tool for greater FOODPOWER . . . U.S.A.! The outlook is for another half century equally as progressive . . . led by the AFMA!

MEMBER AMERICAN FEED afma MANUFACTURERS ASSOCIATION INC.

McMILLEN FEED MILLS — FORT WAYNE, INDIANA

MASTER MIX FEEDS

**EXECUTIVE COMMITTEE—Members of the executive committee and executive staff of the Institute of American Poultry Industries met recently in Chicago to plan work programs for the 1958-59 fiscal year. Shown left to right (seated) are: Dr. Cliff D. Carpenter, who will step down as president of the IAPI July 1; W. F. Leimert, Tranin Egg Products Co., who recently completed his term as chairman of the board of IAPI; J. J. O'Neill, Cudahy Packing Co., new chairman of the board, and Harold M. Williams, who will succeed Dr. Carpenter as president of the group. Standing (left to right) are: Lee Campbell, IAPI merchandising director; W. P. Ayers, Swift & Co., member of the executive committee; Opal Ream, assistant secretary-treasurer; J. O. Parker, Washington representative; Marjorie Turner, secretary; C. E. Sidler, manager of the IAPI West European headquarters, Frankfurt, Germany; Margaret Lally, laboratory director; O. A. Day, Wilson & Co., member of executive committee, and Frank G. Wolfney, field service director.**

do operate dairies and egg plants where we buy directly from the farmer. In eggs, for example, our original sources of supply did not meet the basic requirements of quantity, uniform quality, and dependable supply. We established our own egg buying and candling operations 12 years ago. We are now able to supply our customers with really fresh eggs, of uniform quality, every day in the year. Although we are responsible for getting the eggs from the farmer to the consumer, we do not arrange special financing of producers' operations. We pay them by check on the basis of how the eggs grade when delivered to our candling plants.

**Integration Need**

The retailer's responsibility is that the product he sells be at the place, in the form, in a quantity, and at a price that will satisfy his customers. So long as he can be assured that the product will meet these requirements, I see no reason for him to integrate into areas of farm production.

Several forms of integration have, of course, been required for many years in moving food from farm to consumer. Possibly more vertical integration will be necessary in the future as we go about feeding a growing population.

But it is my personal hope that whatever vertical integration in agriculture is necessary to meet the future needs and desires of the consumer, we will above all respect the rights and freedom of the individual. This is basic in safeguarding our American free enterprise system.

## RETAILER

(Continued from page 75)

it will be their only source of supply because of changing markets and problems of keeping balanced inventories.

3. If the law will let them, some fresh milk processing and bottling plants will integrate with chain stores.

4. In general, I believe, chains will not go up too far on the stream of processing because of:

a. So many different items.

b. The demand for national brands.

c. Return on investment is better in retail stores than processing.

We have seen that at retail and wholesale levels there is plenty of integration. There is a small amount of processing tied to chain store operations but, in general, there is a cut-off between the retail-wholesale function and the grading-processing-manufacturing functions.

The integration taking place in actual farm production of food is really not very large yet except, possibly, in poultry meat. Therefore, it is largely speculation the impact integration is likely to have as it grows in farm product marketing.

Probably the best point to start is to see what's happened with poultry. Everybody uses this illustration. The Arkansas Poultry Co-op., jointly with Armour and the usual feed dealer-hatchery combine, markets a large quantity of dressed poultry.

Armour & Co. gets direct store delivery orders for fryers from Jewel Tea Co. in Chicago. Poultry processed on Monday and Tuesday in Bentonville, Ark., is available for sale at Chicago's Jewel Tea stores by Thursday for the week end business. The processing plant loads the refrigerator truck on the basis of individual store orders. How can you get much more integration than this?

**Key to Efficiency**

This progress is possible because of a known supply as to quantity, quality and price before the live poultry leaves the farm on the one side and on the other a merchandising program of Jewel that knows it will have a home for the fryers by Saturday at closing time.

P & C Food Markets, by placing standing orders (they are for stated amounts for delivery each week and subject to change only occasionally) with Armour & Co., have Monday morning store door delivery by tractor-trailer direct from packing plant. The truck has left Chicago before the price is known by P & C. This program with beef and pork has

(Continued on page 86)

meet the only feed manufactured in Texas with the name...

EXTRA PRODUCTION BRAND LAYING FEED

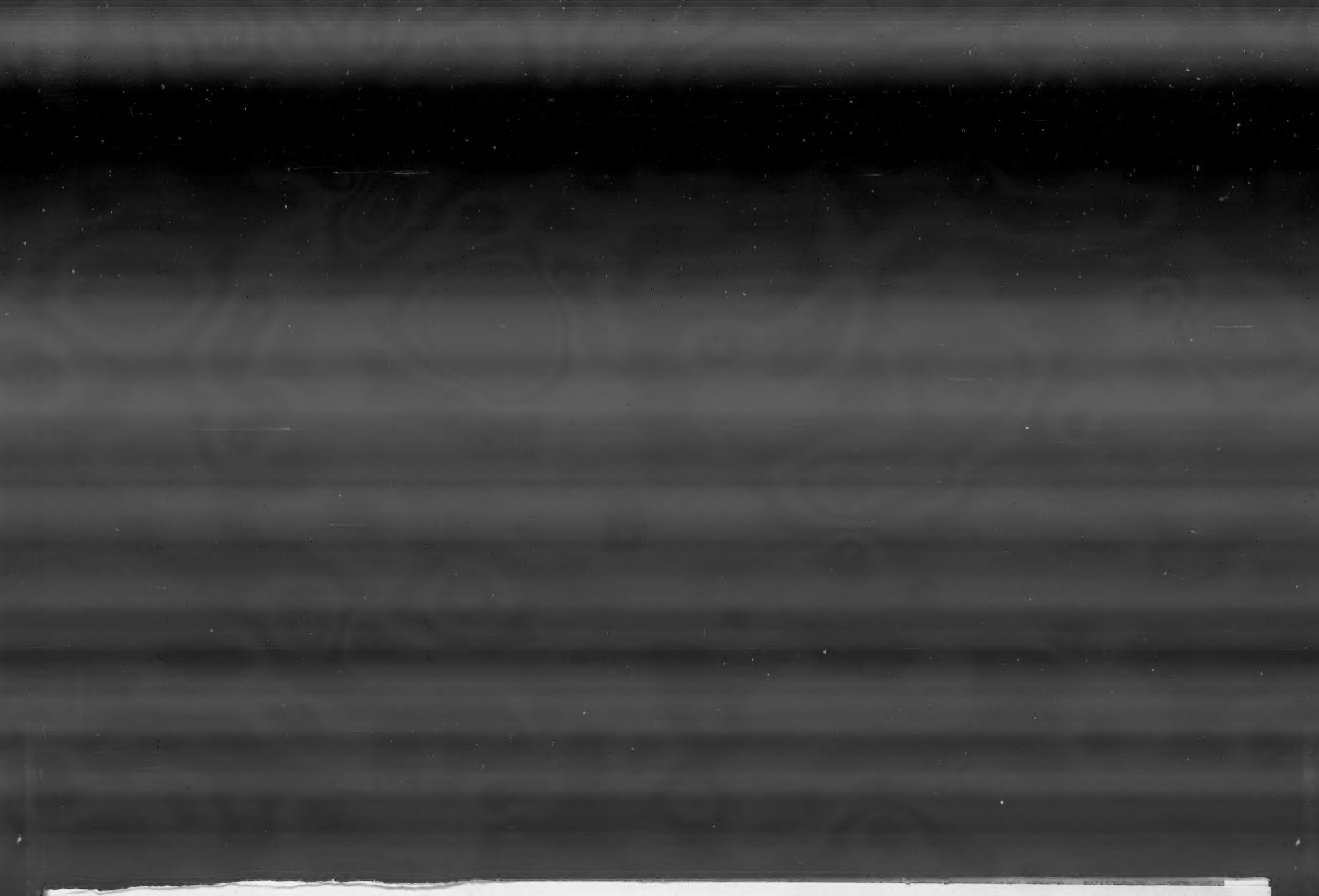
it's TEXO of course

And talk about living up to its name! Poultrymen can make up to $1.00 *more* per hen annually with this new Texo Feed and the Texo Extra Production Laying Program. You'll be seeing it advertised... and displayed by Texo Dealers.

BURRUS FEED MILLS

BOX 1688 • FORT WORTH, TEXAS

WELCOME TO THE AMERICAN FEED MANUFACTURERS ASSOCIATION CONVENTION!



# LOW-LEVEL nf-180® brand of furazolidone prevents production slumps

*. . . even in the best of flocks*

## Penny-a-month nf-180 feeding helps your birds produce extra dollars of egg profit

Even though you're already taking advantage of good breeding, good feeding and expert management, you still can gain profit-plus performance by putting your birds on a feed fortified with a low level of nf-180. Painstaking research and poultrymen's records show you can *replace* relatively higher levels of antibiotics, arsenicals or other drugs with lower levels of nf-180 and come out dollars ahead.

### Increases egg production

Work at a midwestern university showed that the ½ pound level of nf-180 improved production 5.8 percent in caged Leghorns. Another 48-week feeding experiment conducted in an eastern egg-producing state with caged New Hampshires already under highly sanitary, "disease-free" conditions showed egg production improvement of 13.2 percent.

In southeastern tests, nf-180 gave an average improvement of 4 percent over unmedicated control birds, while oxytetracyline at *twice the level of furazolidone* produced a smaller improvement of 3 percent over the controls.

In work at an eastern laboratory, birds on nf-180 were about 6 percent higher in egg production at the end of 24 weeks, 5.4 percent higher at 32 weeks and 3.9 percent higher at 40 weeks.

### Improves feed-egg ratio

Feeding trials from the midwest and from two commercial research organizations show nf-180 substantially improves feed-egg conversion. Typical economies of nf-180 low-level feeding were demonstrated by a test flock of a 130-birds in a commercial operation. During an 8½ month period these birds produced 113 *extra* dozens of eggs and saved 618.8 pounds of feed over an equal number of unmedicated control... ⅓ pound less feed was needed to produce a dozen eggs. With nf-180 delivering a 4 percent improvement in feed-egg ratio, you can expect 200 *extra eggs* per ton of feed from hens laying at 70 percent production.

Feeding low-level nf-180 continuously in 8 different tests improved the feed-egg ratio by 4.9 percent on the average. The high was 11.6 percent.

### Gives better livability

Feeds containing low-level nf-180 cut mortality in laying flocks. Results from one midwestern university show a reduction in mortality from 33 percent to 6.7 percent. In another trial nf-180 saved 6 extra birds for every 100 on test compared to the control flock. By reducing mortality nf-180 saves two ways . . . (1) the market value of your layer plus (2) the egg income she produces.

### Improves hatchability-fertility

Tests in the southwest show that feeding nf-180 increased the hatching percentage of fertile eggs 4.6 percent on the average. A 32-week feeding test at an eastern commercial laboratory also showed that continuous feeding of the ½ pound nf-180 level increased hatchability from 79 percent to 82 percent.

### Protects against stress

Test comparisons demonstrate the positive effect of nf-180 in maintaining greater overall performance of birds under stress due to disease, nutrition and other causes. For example, where severe stress was present with New Hampshire hens on litter, nf-180 at the 1 pound level improved egg production 53.6 percent. The feed-egg conversion was improved 26.7 percent and hatchability was increased from 83.4 to 84.5 percent.

You can get results such as these because nf-180 is the medication that controls more poultry diseases than any other drug. At a continuous low level this potent disease-fighter does more to head off stress-induced troubles that squeeze production. It all adds up to lower-cost eggs, more profit in your pocket at the end of the year.

**All these benefits are yours for**

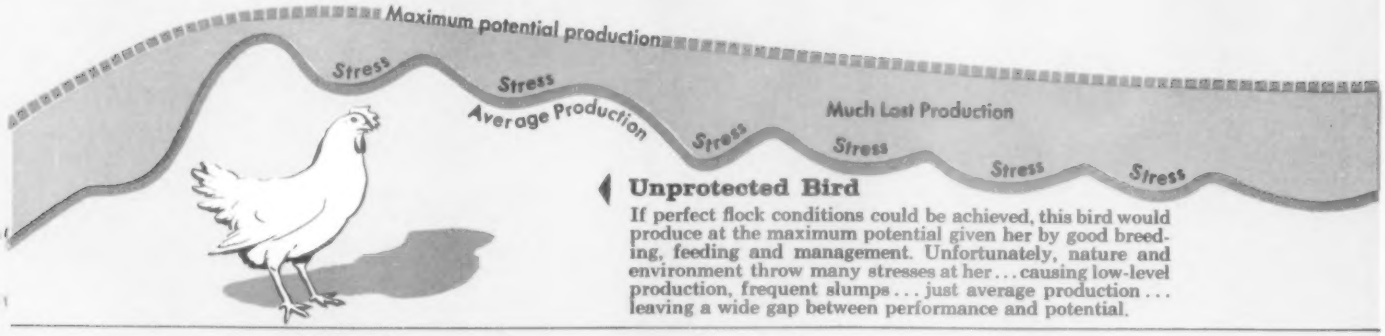
# Penny-a-month

**per bird**

# CONTINUOUS FEEDING

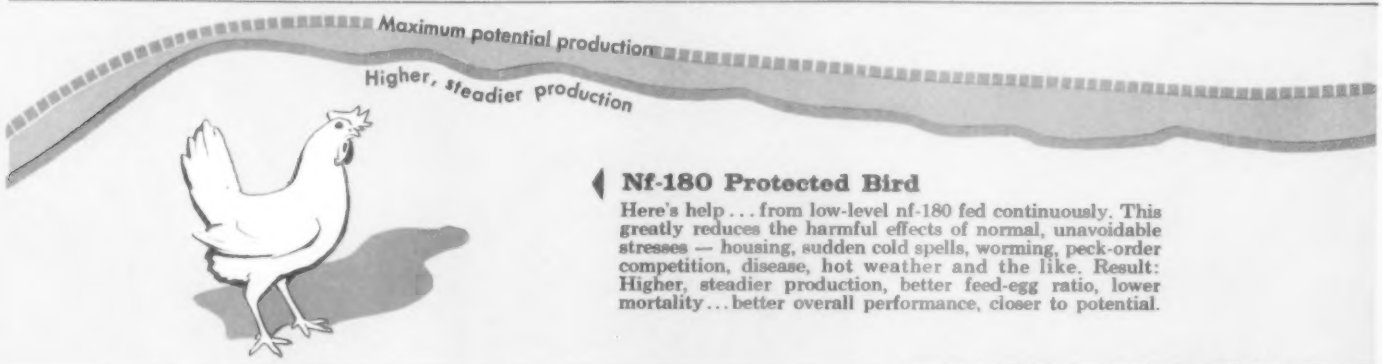
# and boosts overall performance

## and here's how it works . . .




### Unprotected Bird

If perfect flock conditions could be achieved, this bird would produce at the maximum potential given her by good breeding, feeding and management. Unfortunately, nature and environment throw many stresses at her . . . causing low-level production, frequent slumps . . . just average production . . . leaving a wide gap between performance and potential.




### Nf-180 Protected Bird

Here's help . . . from low-level nf-180 fed continuously. This greatly reduces the harmful effects of normal, unavoidable stresses — housing, sudden cold spells, worming, peck-order competition, disease, hot weather and the like. Result: Higher, steadier production, better feed-egg ratio, lower mortality . . . better overall performance, closer to potential.

## . . . the payoff: typical results on 1,000 hens per month

1240 more eggs (36¢)

**$37.20**
extra profit

12.1% more premium eggs

**$5.54**
extra profit

560 lbs. less feed

**$22.40**
saved

7.33 extra layers saved

**$5.44**
saved

A well-managed commercial flock already at 72% production was divided to test results of an nf-180 medicated group against the other half continued without medication. Getting results from a feed additive to improve production beyond 72% isn't easy . . . but nf-180 did it. By adding up the dollar value of *improved production, more large and extra large eggs, better feed-egg ratio,* and *higher livability,* you see a net increase over medication cost of $60.00 per 1,000 hens per month. In effect, spend a penny-a-month per hen for nf-180 and get 6 cents extra profit. Figure this on your flock.

**$60.79 extra income over nf-180 cost of $9.79**

# Questions and answers on Low-Level Continuous Feeding of layers

You'll know you are getting "low-level nf-180" in your feed when you see .00275% *furazolidone* on all-mash ration tags, or .0055% *furazolidone* on regular egg mash tags (fed 50-50 with grain).

If your layer feeds are locally mixed, your dealer can easily add nf-180 by obtaining New nf-180 Custom-Mix TEN for you. This contains the active drug, *furazolidone*. Follow mixing directions.

**Q. Why does nf-180 improve production?**

**A.** Nf-180 is effective against many harmful bacteria. Low-level nf-180 reduces the load of bacteria that cause secondary infections and sap egg production . . . puts birds in condition to make proper use of feeding, breeding and management . . . allows them to lay normally.

**Q. Does nf-180 replace other medications added to feeds for stimulation of production?**

**A.** Yes. Nf-180 can replace relatively higher gram-levels of other additives and save you money in the process. But it is also compatible with other additives and may be used with them.

**Q. What about toxic and harmful after effects?**

**A.** Nf-180 is non-toxic to all poultry, livestock and pets — does not build up in tissue.

**Q. Can nf-180 medicated feeds be fed to breeder flocks?**

**A.** Definitely yes . . . improves production, fertility and hatchability.

**Q. When should higher levels of nf-180 be fed?**

**A.** During the first week birds are housed and during any period of severe stresses or disease outbreaks. Nf-180 at the level of 100 grams furazolidone per ton prevents and controls more poultry diseases than any other drug.

**Q. Are water medications necessary in addition to nf-180 in the feed?**

**A.** Nf-180 fed continuously at low-level can save you money by replacing water medications. (See above). If a few birds are too sick to eat or drink, individually dose them with nf-180 Tablets and let nf-180 in the feed take over.

**Q. Can low-level nf-180 be fed on a 50-50 mash and scratch program?**

**A.** Yes . . . in this case the commercial egg mash should have 50 grams (.0055% furazolidone per ton to give you a 25 gram level in the complete ration when half grain is fed.

## Get your feedman to help you put nf-180 to work boosting your egg profits

Higher egg profits are always welcome . . . always needed. Rare is the case where flock performance can't be improved — more eggs, less feed used per dozen, fewer death losses — it all adds up. Figures on improvements shown in this piece are on the conservative side. Dollar gains should show up even better where flocks have slipped to 60% production or less. Spending a penny-a-month per bird to get 6 cents extra profit or more per bird is worth going after. That's $60.00 or more on 1,000 hens per month. Get nf-180 in your feed. Your records will show you.

**nf-180®**
brand of
**furazolidone**

*One of those lifesaving*
**nitrofurans**
*germ killers that last*

**HESS & CLARK, Inc.**
ASHLAND, OHIO

# Penny-a-month

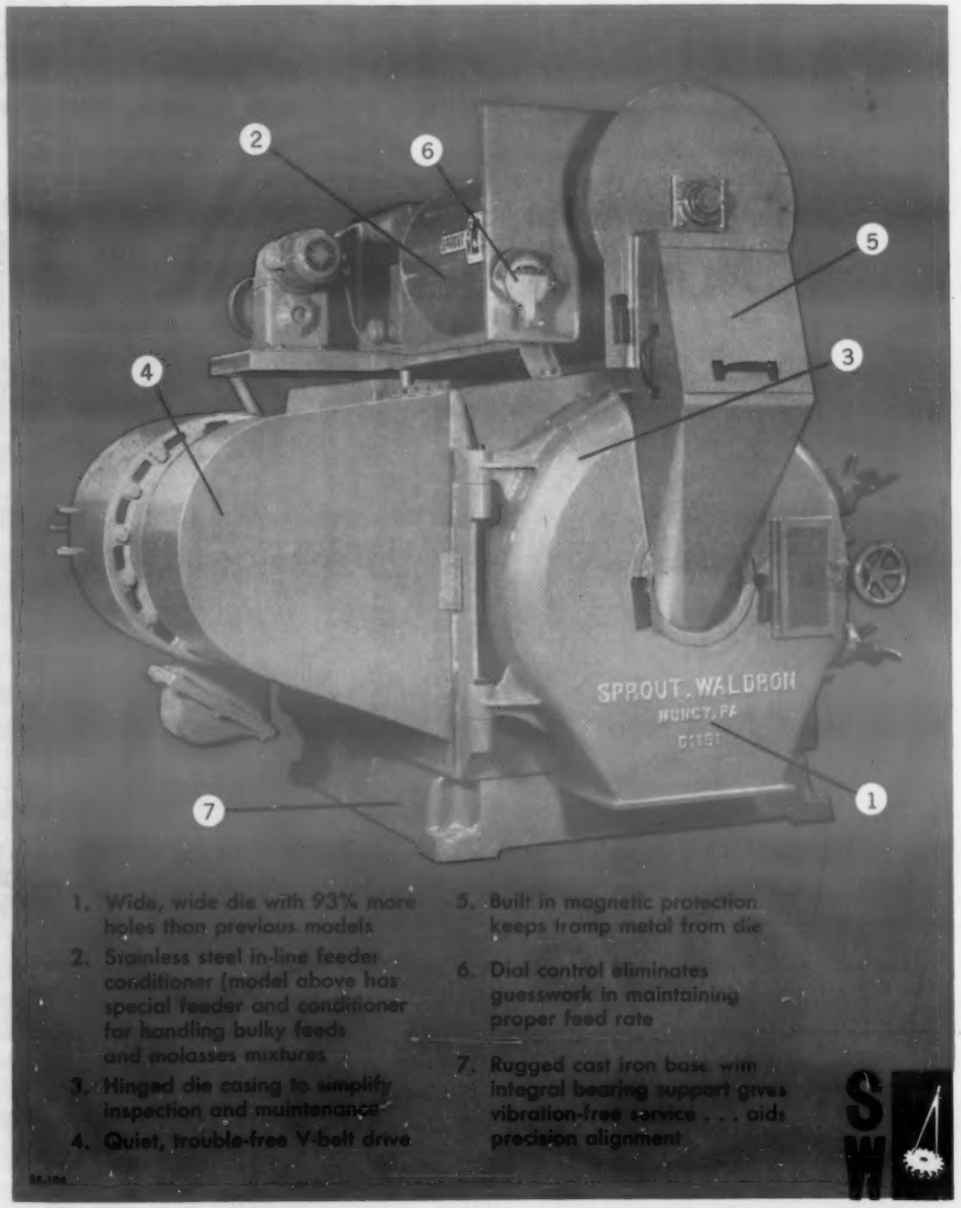
## LOW-LEVEL FEEDING

# nf-180 boosts performance

- Improves egg production
- Saves feed
- Reduces mortality
- Maintains production under stress

and more

*Now available for* ***SUPER*** *production and* ***SUPER*** *profits!*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SPROUT, WALDRON
MUNCY, PA
7
1
1. Wide, wide die with 93% more holes than previous models
2. Stainless steel in-line feeder conditioner (model above has special feeder and conditioner for handling bulky feeds and molasses mixtures
3. Hinged die casing to simplify inspection and maintenance
4. Quiet, trouble-free V-belt drive
5. Built in magnetic protection keeps tramp metal from die
6. Dial control eliminates guesswork in maintaining proper feed rate
7. Rugged cast iron base with integral bearing support gives vibration-free service . . . aids precision alignment
S W

# SUPER PELLET ACE

## 93% more holes...in NEW wide, wide DIE

The new SUPER ACE, with up to 93% more die holes, produces harder pellets faster, provides longer die life, cuts operating costs and increases production. It offers even more tons per die at lower cost per ton than the world famous PELLET ACE.

In designing the SUPER ACE all the fine quality features which have made Sprout-Waldron pelleters the most imitated in the industry have been retained. You'll find the same stainless steel in-line feeder conditioner; the same hinged die casing; the same quiet, trouble-free V-belt drive; the same built-in magnetic protection; the same rugged, reliable construction and easy-maintenance design for which S-W is so famous.

You'll also find the same S-W customer protection policy, which strives for constant product improvement with maximum concern for owners of current models. Users of the S-W Pellet Ace (1949 and subsequent series) will be able to purchase a special conversion kit, making possible the use of the new wide, wide die and wide rolls. This will mean better pellet quality, longer die life and greater capacity where presently unused horsepower is available.

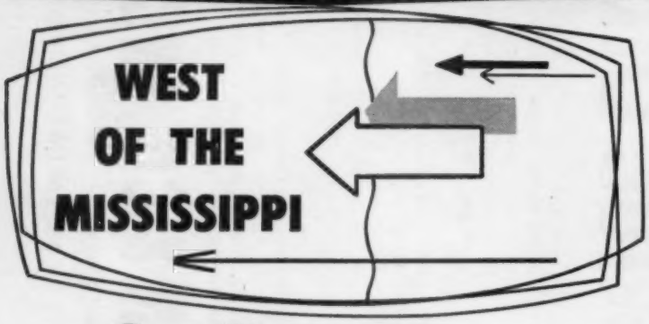
For the full story on the new SUPER ACE and what it can mean to you in terms of greater production and longer die life, ask for our new illustrated Bulletin No. 201.

**SPROUT, WALDRON & CO., INC.**

*—The Best in Milling Equipment Since 1866—* MUNCY, PENNA.

**Exclusive Canadian Distributors: Strong-Scott, Limited, Winnipeg**

If you're a Feed and Mineral manufacturer in the states




See Page 57

nothing to do with integration of farm production but is a result of packer and store working together. However, Armour tells me they do not want too large a percentage of their total business on this basis because of their inability to control supply from feed lots.

**Mrs. Housewife Boss?**

I have never been one of those who quite subscribe to the thought that Mrs. Housewife is our ultimate boss. I think she is capable of being led. She certainly never asked for hundreds of the food items that are available today. If she did, there would not be as many good specialties die being born. Most food retailers are more concerned over a competitor's merchandising program than with the housewife.

**Power in Marketing**

There are three general positions of power in marketing. They are:

1. Retail-wholesale.
2. Assembly-grading-processing-manufacturing.
3. Producer or farmer.

In an economy of plenty, the strength or most powerful is the retailer-wholesaler. The producer or farmer has the least power, with the processor in the middle.

In an economy of scarcity, the power position is reversed. The only trouble is that the years of power each may have are not well balanced. It seems to take a war to give the farmer the balance of power.

Sometimes when the position is in process of change, the assembler-grader-processor really gets it.

**Processor-Producer Integration**

1. With complete integration it would seem that it would be possible to produce food, particularly meat, more on the basis of advance orders. (Notice I said more, not completely.) Let's illustrate.

Retail stores can forecast surprisingly accurately sales for several weeks or months ahead.

It's been demonstrated without a corporate tie-up a retailer and packer can do business without a known price at the time an order is given.

When we have a processor integrated with a farmer and the processor with a known amount of business coming up, both can certainly plan production schedules.

I do believe as we get fewer farmers and larger retailers, a program of negotiation and integration can take some of the highs and lows off our production. This alone would be a real accomplishment.

If some advance ordering can take place with integration and help to stabilize the supply of food, then it surely follows that the price will fluctuate less. Then the question arises, will the price be a high one or a low one?

I am sure neither extreme will take place, but will guess price will be on the low side. We tend to have maximum facilities and then have to use them. To do this we cut price. Even with some control over supply, I think consumers can look for reasonable to cheap food prices.

2. Quality. Quality in food is always important. Quality that sells is relative. I'm not one who believes in a high practical quality. There is less waste and it sells better. Integration with better control and use of science at producer level should give us larger supplies of good practical quality. Integration should make it easier to effect latest scientific knowledge.

**Conclusion**

I am sure by now you have decided that the writer doesn't see much wrong with integration as it concerns marketing farm products. Integration as it affects the farmer may be something else, but a discussion of it is not my assignment.

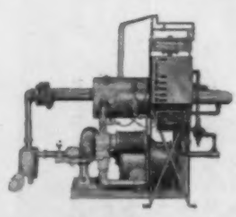
Integration, if well handled at all levels of marketing, cannot but help in the development of orderly and direct marketing.

with Kemp Inert Gas Generators!

Why do more producers protect their dehydrated alfalfa with inert gas generated by Kemp?

The facts are: Kemp Inert Gas Generators were perfected by experts and proved over the years by world-wide industry; Kemp Generators offer alfalfa producers maximum quality control at a minimum of operating cost; Kemp Generator installation is low cost . . . maintenance is negligible . . . and operation simple!

Kemp also offers the most complete line of generator capacities . . . one of which can be the most profitable solution to *your* storage problem. Kemp engineers will be glad to discuss details and technical information with you; simply write, wire or phone: C. M. KEMP MFG. CO., 405 East Oliver St., Baltimore 2, Maryland.

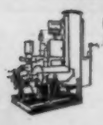


This 1-MIME is designed to supply enough inert gas to protect 2300 tons of alfalfa storage.

This 8-MIME protects up to 20,000 tons of alfalfa. One of 25 Kemp Inert Gas Generator models.

KEMP OF BALTIMORE

INERT GAS GENERATORS



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## PRODUCER

(Continued from page 74)

benefits for him which are enjoyed by employees of other industries, such as sick leave, annual vacation with pay, group insurance, company retirement benefits, and college scholarships for deserving children of employees? Many businesses can control production by hiring or laying off workers, but the farmer, because of his long term program, cannot operate that way. True it is that very few farmers will ever become really wealthy, but the knowledge that wealth can be obtained and that

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# U.S.I. FEED NEWS®

Vol. V ★ A SERIES FOR SCIENTISTS AND EXECUTIVES OF THE FEED MANUFACTURING INDUSTRY ★ No. 5

## Penicillin and Bacitracin Foster Vitamin Synthesis

Recent studies with chicks show that adding penicillin and bacitracin to the rations depresses the numbers of vitamin-requiring bacteria in the digestive tract, and increases the numbers of vitamin-synthesizing bacteria. This demonstrates another benefit of these antibiotics in improving growth of poultry.

## Vitamin E Lack Lowers Chick Body Temperature

Several recent tests show that poultry on rations deficient in vitamin E have body temperatures several degrees lower than birds on normal feed. With extreme deficiency of vitamin E, body temperatures dropped many degrees in these tests. This indicates the possible value of vitamin E in stresses caused by cold weather feeding.

## Methionine in Ration Stimulates Digestion of Cellulose by Ruminants

Tests using artificial rumens, which were later verified by actual lamb feeding trials, show that methionine consistently increases cellulose digestion. The amino acids, alanine and proline, also improved cellulose digestion but the sulfur-containing amino acid methionine was more effective than either alanine or proline in the artificial rumen.

Other amino acids tested had no effect on digestion of cellulose. In actual lamb feeding trials, methionine produced gains that paralleled the results in the artificial rumen.

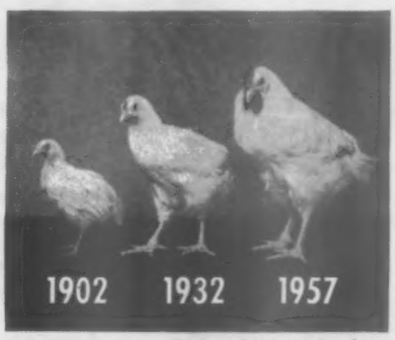
## New Feed Developments Loom Ahead As AFMA Reaches Golden Anniversary

In the last 50 years, feed industry progress has been greater than in all previous history. But, many feed experts agree that even greater advances will occur in the years just ahead.

The tremendous growth in volume of manufactured feeds has been accompanied by even greater improvements in feed quality and efficiency. Lower-cost, better-flavored meat, milk and eggs have been natural results of the fast acceptance of new developments by the feed industry. U.S.I. has helped in making many of these important changes, as a leader in introducing such valuable fermentation products as molasses distillers solubles, riboflavin and vitamin $B_{12}$, and as the pioneer producer of methionine.

### Feeds Boost Poultry Use

The close cooperation of feed manufacturers, ingredient suppliers and agricultural experiment stations, in developing better feeds, has been increasingly evident. Mrs. Consumer has benefitted greatly, although she scarcely realizes the contribution the feed industry has made in supplying her with nutritious, economical animal products.




—Univ. of Wisconsin photo

**Fifty years of feed progress are shown in this photo of 9-week-old chicks grown on rations typical of the years indicated. Similar improvement is needed in feeds for other kinds of livestock.**

Poultry consumption has moved up fast in relation to pork and beef, thanks to new feeding and breeding developments with meat birds. The time is ripe for similar advances in other forms of meat. Mrs. Consumer wants better quality at lower cost . . . and she wants it now.

### Must Please Food Buyer

Today the consumer benefits from the feed industry's use of vitamins, amino acids, antibiotics, hormones, vegetable proteins as well as other innovations such as automation and bulk handling. One of the newest advances is labor-saving liquid feeds. U.S.I., with Feed Service Corporation of Crete, Nebraska, is producing MOREA® Premix for making MOREA liquid feed supplement for ruminants.

This new product helps farmers cut feed costs and get faster gains. It gives packers better grade carcasses and higher dressing percentage. It gives grocers and consumers tender, flavorful, lean meat with less fat. MOREA liquid feed builds high feed efficiency in producing the kind of meat the customer wants.

Selling feed today is not simple, as recent trends in contract production of poultry and red meats have shown. The chain effects reach all the way to the supermarket and the corner store and back again. Like the farmer and the processor, the feed man must consider the consumer. As leaders in the feed industry gather this month, they may well assess their aims in improving feed technology this way: "Mrs. Consumer—we aim to serve you!"

MOREA is a registered trademark of Feed Service Corporation.

FEED PRODUCTS OF U.S.I.

- U.S.I. ANTIBIOTIC FEED SUPPLEMENTS (bacitracin and procaine penicillin)
- U.S.I. VITAMIN $B_{12}$ SUPPLEMENTS
- U.S.I. MENADIONE PRODUCTS (vitamin $K_3$)
- U.S.I. BHT PRODUCTS
- U.S.I. CUSTOM MIXES
- U.S.I. RIBOFLAVIN PRODUCTS
- U.S.I. CHOLINE CHLORIDE (25% dry or 70% solution)
- MOREA® PREMIX
- U.S.I. CALCIUM PANTOTHENATE Products
- U.S.I. DL-METHIONINE (feed grade)
- U.S.I. PERMADRY (sealed-in vitamin A)
- U.S.I. VITAMIN $D_3$ (stabilized)
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BRANCHES IN PRINCIPAL CITIES

U.S.I. INDUSTRIAL CHEMICALS CO.
Division of National Distillers and Chemical Corporation

99 PARK AVE. NEW YORK 16, N. Y.

there is freedom to strive and compete for that obviously desirable objective must ever be present.

**Incentives Needed**

The success of our free enterprise economy stems from incentives for the individual, and, as of now, I do not believe that individualism has outlived its usefulness in agriculture.

Pride in personal achievement has had far more to do with the rapid growth and advancement of scientific knowledge in agriculture than any other factor. The farmer who wins will be the one who makes the greatest use of advancing science. He does not necessarily have to be a big farmer; he must be, above all else, mentally alert.

The threat of swine integration is serving a good purpose if it forces all of us, desiring to continue on an individual, independent basis, to become more efficient. If outside interests do take over the production of swine, it will be because we have not kept pace with all of the latest information made available to us.

Any independent hog producer can provide himself with all of the latest production ideas that contract farming claims to provide. He can secure performance high-tested breeding stock and he can do his own testing or have it done under the supervision of county and state swine producer associations. He can set up and follow a multiple farrowing program using his present equipment as a basis. He has available all of the latest information on how to curb disease, and he can very easily keep up on the latest developments in least-cost rations.

**Marketing Problem**

Yes, the production end can be handled. But marketing—this is the hard one to keep up with and understand.

We are told that our market economy is controlled by the action of consumers. In buying or in not buying, the consumers determine what ought to be produced, both in quality and quantity.

Since this is the case, we should continually strive to give the consumer the best product possible, but not at a price that does not allow the producer a fair return for his labor and investment. If we produce a product that meets the consumers' specifications, then we, or those that process and retail our products, are in a better bargaining position to secure a fair price.

The only person we can look to for our profit is the consumer. If we meet his specifications, then we can bargain with him. That is the only way our take is decided.

**Examples Cited**

A case was brought to my attention where a sizable feed company contacted the hog-buying department of a ruputable packing firm and endeavored to secure a guaranteed premium on all hogs produced under their contracts, even though some of them might not grade No. 1, in exchange for a guaranteed weekly supply.

Would a situation of this kind be conducive to good consumer relations? Would this help pork to regain its position in the American diet?

They tell us that contract hog feeding has built-in production control because there is no contracting for products that aren't needed.

What happened to production in contract broiler feeding? From the information I can gather, it appears that over-production, not increased efficiency, was the cause of the low prices paid by consumers during the last year for broilers. And why has the broiler industry been under investigation by the congressional small business committee?

Prof. Wendell Earle of Cornell University says, "To be successful, an integrated program must pay higher prices for eggs and provide feed at lower cost to producers. There is no evidence yet that they can accomplish either of these objectives with the present contracts."

**Different Opinions**

The feed companies have different opinions about contract swine feeding. Some are betting that swine integration is sure to take over. Others are of the opinion that the independent producer will be around for a good long time. Those who are betting on integration are in the process of diversifying their activities to include production financing. Evidently they have decided that they have exploited the maximum opportunities in their own field and that they are now ready to move into the other guy's field.

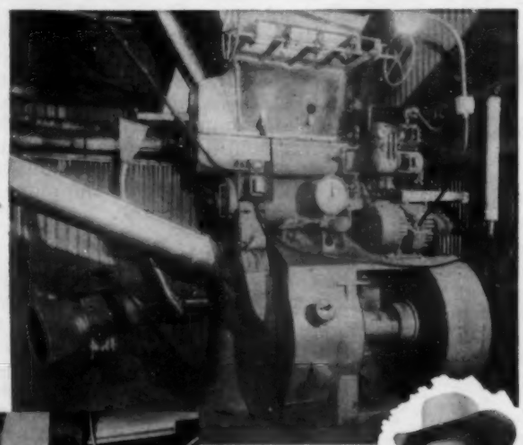
They probably will be willing to raise hogs at cost in order to have a steadier and more profitable outlet for their feed. I'm afraid that a lot of corners are going to be turned too short if outside interests, such as feed companies, are going to be the marketing agents for contract hog production. A feed company's business is selling feed, and I am sure that their financing policies for contract feeding are being used only as feed sales gimmicks.

**At the Crossroads**

It may be that the only way farmers can gain bargaining power is to band together, but the record of farmers in support of cooperative marketing efforts has not been good. In my opinion, we are at the crossroads in agriculture. Producers are going to have to make their own decisions as to what their freedom is worth. I, personally, am a strong advocate of independence, but not of stubborness. I would rather relinquish a fraction of my independence and still retain a voice in the operation of my business than to lose all of my independence.

It may be that cooperative marketing agencies will give the farmer an opportunity to integrate his own


# Proving the Versatility and Performance of Wenger Multi-Duty PELLET MILLS



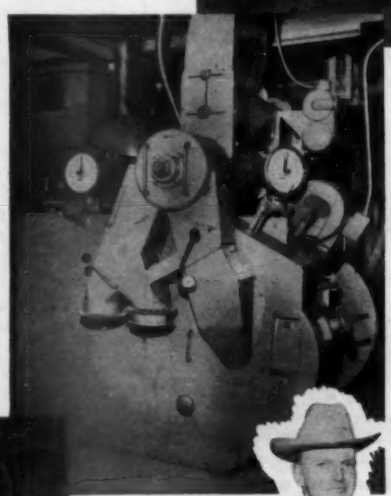
Although engineered primarily as a hard pellet mill, the Wenger Multi-Duty is exceeding expectations in every field of feed processing. For producing hard pellets (with or without liquids) Wenger blended mash feeds, and with Hi-Molasses pellet extruder available as an optional extra, the Multi-Duty represents the greatest advance in feed processing in many years.

**FOR ECONOMY—**

- in total equipment cost
- in man hours per ton of production
- in operation
- in liquid proportioning
- in floor space
- in installation costs
- in minimizing contamination hazards

**No other pellet mill is the equal of the Multi-Duty.**

*Write for Catalog*

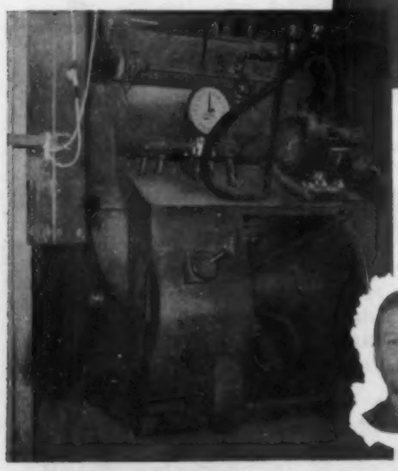


Mr. Ray Steel, Vice Pres. Indianola Operations, Honeggers', Inc. Indianola, Iowa

Honeggers' 100 HP Multi-Duty Pellet Mill which is used in producing both hard pellets and Hi-Molasses pellets in their new mill at Indianola, Iowa.

Mr. Steele says "Our new Wenger Multi-Duty does even better than we had hoped for. I'm sure this machine is the answer to the need in the feed industry for a smaller, but still a more efficient feed manufacturing plant."

Mr. Larry Jenkins, President Texas Feed & Cattle Co., Kilgore, Texas



Wenger's 100 HP Multi-Duty Pellet Mill with built in liquid conditioning feeder for fats and molasses is the heart of their fine new mill.

Mr. Jenkins says: "We are obtaining optimum quality control in blending liquids in our Wenger Multi-Duty Pellet Mill with excellent tonnage and a minimum of fines."

Mr. Wendell S. Haley, Manager Ashland Cooperative Exchange Ashland, Kansas

Ashland is using a new Wenger 50 HP Multi-Duty Pellet Mill to make Hard Pellets and Hi-Molasses Pellets as well as molasses meal feeds.

Mr. Haley states that, "In my opinion the Multi-Duty is tops in performance and the Wenger Company is tops in service and 'follow thru'."

**Wenger Mixer Manufacturing**
SABETHA, KANSAS · PHONE 111

Standard of the Industry for Liquid Feed Mixing, Pelleting and Cooling Equipment.

Use K-M IN BABY CHICK DRINKING WATER!
Wise POULTRYMEN use
HILLTOP LABORATORIES
— Aids for Poultry —
for Greater POULTRY PROTECTION!
WRITE FOR CATALOG AND PRICE LIST!
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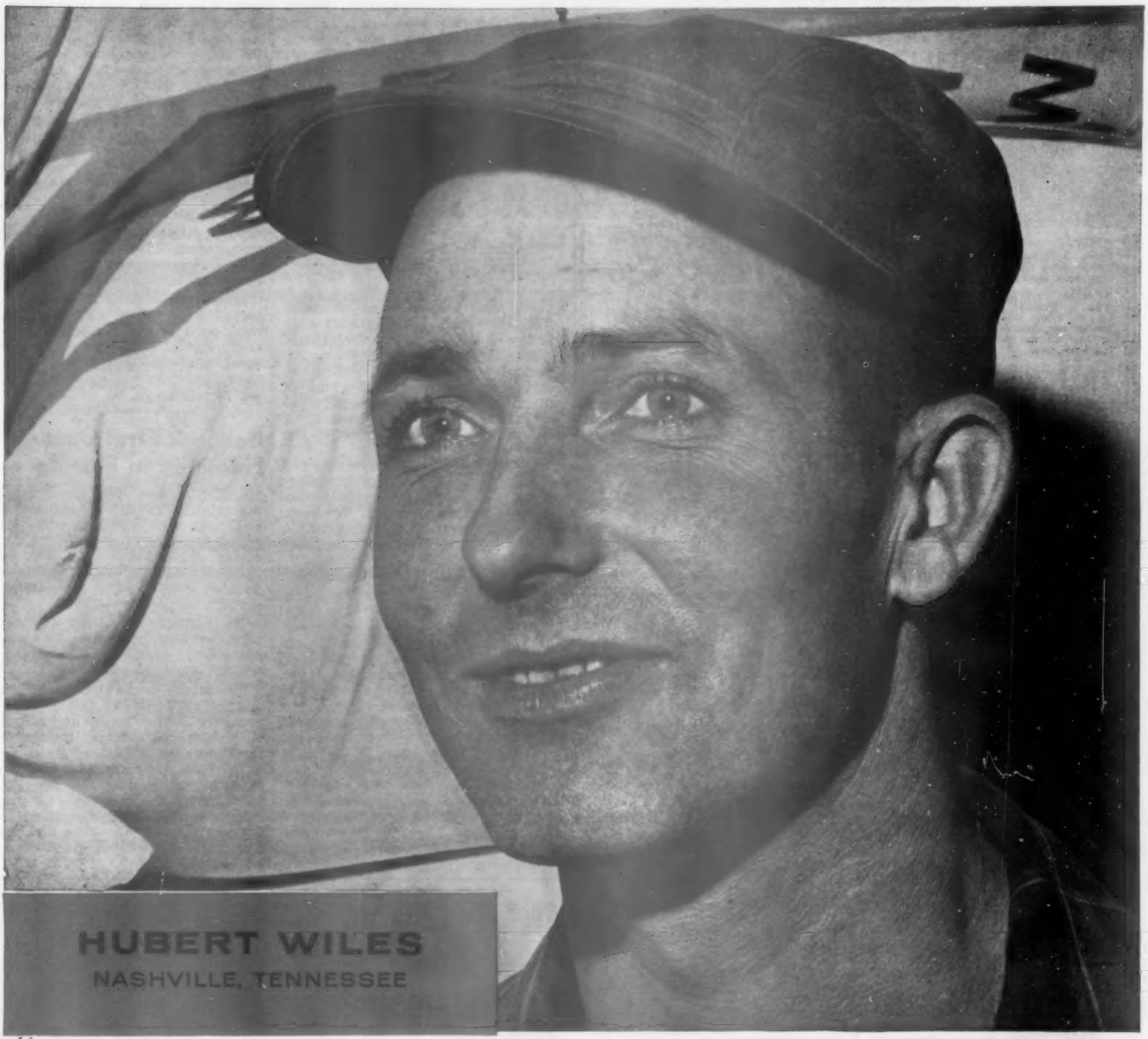



# "We recommend Morton T-M every time"

In his area, Hubert Wiles does an outstanding job of selling Morton Trace-Mineralized Salt. His sales volume runs about 75 tons of T-M a year and T-M Salt grows increasingly important to his business and profits.

We feel the successful experience of this dealer in selling Morton T-M Salt is of value to all salt dealers. Therefore, we checked with Mr. Wiles and now pass along the "secret" of his sales success. He reports:

*"We recommend T-M Salt to all our livestock feeders.* Once started on T-M they make it a regular part of their feeding program and become steady customers. As a result our sales of T-M grow steadily.

"Any dealer should find Morton T-M a profitable item in his line. It's a quality product and the Morton name, backed by strong advertising, makes it a product that sells easily," Mr. Wiles states.

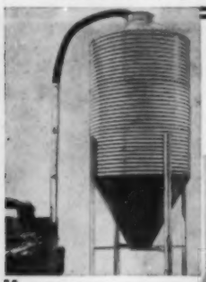
**T-M Salt helps build feed business.** When sold for free choice feeding to beef cattle, dairy herds, sheep and hogs, Morton T-M Salt makes all feeds do a better job for livestock raisers. That, of course, means satisfied customers and repeat orders for both T-M Salt and feeds.

If you already handle Morton T-M Salt, take a tip from Mr. Wiles and increase your sales volume and profits. If you would like to add T-M Salt to your line, write Morton Salt Company, Chicago, Illinois.

## BACKED BY STRONG ADVERTISING

As a Morton dealer your T-M sales effort is backed by consistent, down-to-earth advertising in leading farm and ranch publications. Radio sales messages also tell farmers and ranchers everywhere the benefits of using T-M Salt. Listen to the Alex Dreier radio show "Topic for Today" every Saturday immediately following the "Farm and Home Hour."

# MORTON T-M SALT



THE *Montana* BLOWER FILLS BULK TANKS, BINS; LIFTS FEED 20 FEET!

The MONTANA Grain & Feed Blower puts you in the bulk business for minimum investment — yet does job effectively, efficiently. Fits any make or size truck or pick-up. Can be used alone or combined with conveyor-bottom truck. Blows feed, grain, pellets.

ABOVE: Filling bulk tank from pickup using new Montana Feed Hose.

RIGHT: Man is handling bulk feed using Montana blower and special Butler kit for air-filling bulk tanks.

LIST PRICE $240 F.O.B.

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CORN DISTILLERS SOLUBLES WITH GRAINS

BOTH GRAIN FERMENTATION PRODUCTS

NADRISOL

CORN DISTILLERS DRIED SOLUBLES

These economy fortifiers are rich in proteins, vegetable fats, and highly nutritious. They also contain essential Vitamin B-G Complex factors, as well as unidentified growth factors. Mixing Nadrisol or Produlac in your formula feeds will promote quicker growth, greater meat and egg yield and will produce feeds your customers want to buy. It's a good way to gain and hold customer acceptance.

Sold only to manufacturers of formula feeds.

NATIONAL DISTILLERS PRODUCTS COMPANY

GRAIN PRODUCTS SALES

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production with marketing. Maybe state marketing orders are the answer; maybe the new kind of selective selling cooperative as advocated by the editor of Farm Journal is the answer.

Howard Hill, president of the Iowa Farm Bureau, says, "If integration is coming, the Iowa farmer is going to see to it that integration's benefits accrue to the farmer rather than someone else."

It is time we ask ourselves what kind of an agriculture we want. It isn't going to do any good to lean against the barn door and feel sorry for ourselves or to blame the big guy because he is more efficient than we are.

We must become more interested in what happens to the product after it leaves the farm. A knowledge of marketing set-up is now just as important as any phase of production. It appears to me that the kind of marketing agency necessary to be at all effective must be backed by a majority of the best farmers in the nation.

Until we in agriculture become big enough to ignore our petty differences and jealousies, we will continue to run standing still. We must become concerned enough to band together in the defense of our business rights, or else we will all have to share the blame if outside interests take over.

**Urges Unity**

If we were all united, we would then have the necessary members, all directed toward one common goal for the good of all farmers. We would then have the bargaining power needed with which to attack our marketing problems. We would then be heard and respected by all other industries.

In my home county the bankers' association is quite active and they are, of course, very interested in keeping abreast with our fast-moving agriculture. They realize that agriculture is in a period of high-cost production which is making efficiency an absolute necessity for financial success. They have a big stake in the future of agriculture and are disturbed by the advent of these new swine production financing plans being offered by outside interests.

They have taken a realistic view of the situation and have sought information on the latest scientific production methods so that they are in a position to pass on this information to their farmer customers. They know that when too much outside capital enters the picture, outside management follows. They also know that if too many individual farms disappear, rural banks will follow.

If we, the farmers, are to keep intact our stake in agriculture, we must do it by doing a better job of producing and marketing; thereby convincing consumers that we can meet their specifications better than any factory farm.

## Babcock Firm Opens Hatchery in Florida

QUINCY, FLA.—The new Babcock Gulf Hatchery, Inc., opened May 8 at Quincy with ceremonies that included a "ribbon cutting," egg producers' clinic and a free barbecue. The operation is associated with Babcock Poultry Farm, Inc., Ithaca, N.Y.

The hatchery will serve Alabama, northwest Florida, southwest Georgia and central Tennessee, according to William Montague, manager.

Mr. Montague located in Florida last fall to set up the new hatchery. A native of Tennessee, he received his poultry and hatchery training at the University of Missouri under Dr. E. M. Funk. He managed a hatchery at Jackson, Miss., for 8½ years before joining the Babcock organization, where he was in charge of the Babcock national franchise program for two years.


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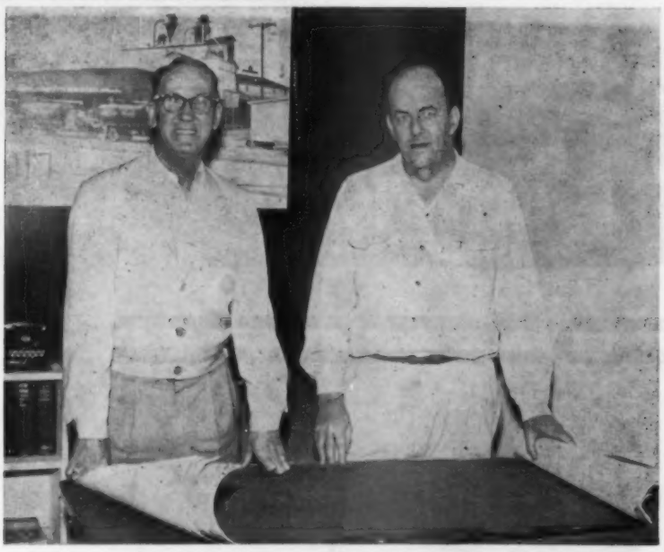


**BUILDING POULTRY PROCESSING PLANT—John Tyson (left), owner of Tyson's Feed and Hatchery, Springdale, Ark., and Keith Elliott, examine blueprints for the processing plant under construction for Tyson Poultry, Inc., which was formed by Mr. Tyson. Mr. Elliott will be general manager. The Tyson feed mill can be seen in picture on wall behind them.**

## Arkansas Firm Expands Integrated Operations

SPRINGDALE, ARK. — John Tyson, founder and owner of Tyson's Feed & Hatchery here, has announced formation of a new firm, Tyson Poultry, Inc., which has let contracts and started construction on a 60x260-ft. poultry processing plant.

The plant is to be in production Aug. 1, and will initially dress, pack and distribute ice-packed poultry, according to Mr. Tyson. It is to be of up-to-date design, with separate picking and eviscerating rooms and a viscera flow-away system. Plans have been approved by the U.S. Department of Agriculture, he said, for federal inspection.

Equipment is to be installed which will enable personnel to dress 3,000 birds an hour and a total of 28,000 daily. The building has been designed so that production can be expanded to 4,800 hourly and 40,000 daily, without additional construction. The building is to be a Butler Steel structure, with masonry walls and a galvanized roof. It will house a "straight work-through" plan, with live birds unloaded at one end and ice-packed, dressed birds loaded out the other. The processing equipment will be supplied by the Southern Equipment Co., Gainesville, Ga.

Keith Elliott, formerly manager of the Southern Poultry Processing Plant, Terrell, Texas, will be general manager of the plant in Springdale, which is expected to employ about 100 people at full capacity.

Mr. Tyson said his feed and hatchery firm is one of the largest integrated poultry organizations in the area, and includes hatching, feed manufacturing and growing operations on both its own and those of contract growers. It also includes live delivery to processors with a fleet of Tyson feeder trucks.

## Division of Fisheries Institute Elects Head

SAN FRANCISCO — Stanley W. Letson, Portland, Maine, was elected chairman of the executive committee of the National Fisheries Institute's industrial products division at the Institute's 13th annual convention in San Francisco recently. Mr. Letson is treasurer of the Maine Marine Products Co.

Thomas A. Barber, J. Howard Smith, Inc., Port Monmouth, N.J., was named vice chairman, and Exteen Corbett, Nassau Fertilizer & Oil Co., Fernandina Beach, Fla., was elected secretary.

Other members of the committee are Raymond L. Haynie, Jr., Reedville Oil & Guano Co., Reedville, Va.; Earl P. McFee, Gorton's of Gloucester, Gloucester; Harvey W. Smith, Fish Meal Co., Beaufort, N. C.; George R. Wallace, Wallace Fisheries Co., Morehead City, N. C.; James T. Barnes, Brunswick Navigation Co., Southport, N.C., and Jack T. Styron, Louisiana Menhaden Co., New Orleans. Mr. Styron is the retiring chairman of the committee.

## Bulk Feed Equipment Displays Scheduled

MINNEAPOLIS — The bulk feed equipment industry will sponsor a "bulk feed fair" at the Minnesota fair grounds, St. Paul, June 11-13, according to R. S. Noller, assistant regional sales manager, farm equipment division, Butler Manufacturing Co., Minneapolis.

Mr. Noller has sent a letter of notification of the affair, and an invitation to attend, to 125 sales managers of feed companies.

In the letter he said, "The reason we are doing this is to aid you in the merchandising of bulk feed. This will give you a chance, if you so choose, to educate all of your interested people in the latest in bulk equipment by actually showing it to them.

"From experience we know the dealers are asking your people questions about bulk. They want the right answers so as to get the best equipment for the particular use they have in mind."

He said all equipment companies have been contacted in regard to showing their equipment, and that a complete line of bulk feed handling, transporting and storage equipment will be on display for feed men.

## Virginia Inspection Fee

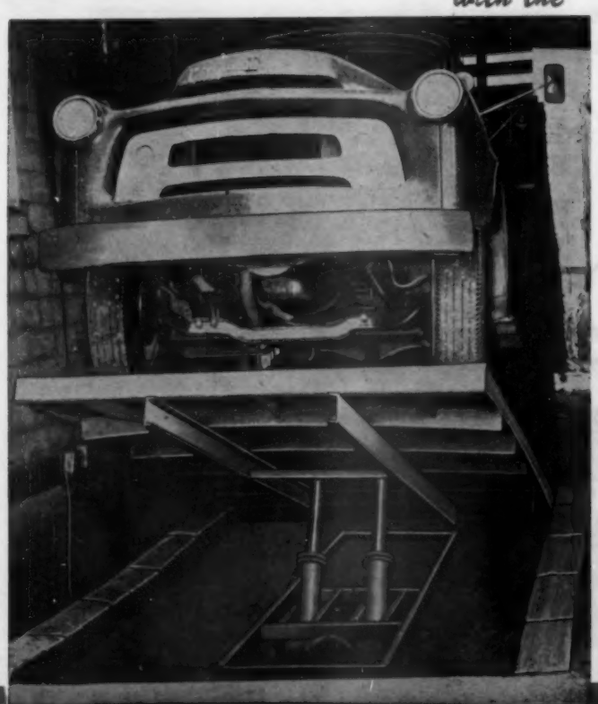
ROANOKE, VA. — The summaries of state feed laws published in the April 26 issue of Feedstuffs show a registration fee of $15 per brand for canned animal feeds annually in the state of Virginia summary on page 50. This is incorrect. The Virginia law should read, "Canned animal feeds must be registered annually by Jan. 1; subject to $25 annual inspection fee per brand."


*Make bulk unloading*

**Simple . . . safe . . . efficient . . . economical**

*with the*

**JAY BEE HYDRAULIC TRUCK HOIST**



- 7' x 12' platform handles pick-ups and long wheelbase trucks.
- Double cylinders give extra lifting power—hoist rises to 45 degrees.
- No wheels—rails—no overhead structure—no danger of injury to operator or damage to truck.
- When not in operation, platform is flush with ground level and becomes usable working space.
- Like all Jay Bee equipment, the Jay Bee Hydraulic Truck Hoist is built to do more work—to do it better—and at lower cost.

FOR COMPLETE INFORMATION MAIL THIS COUPON TODAY!

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Please send me complete information about the Jay Bee Hydraulic Truck Hoist

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This cow at Purina's Research Farm not only makes judgments in the usual manner, but also shows why through a window in her side.

# "...and they shall be judged by a jury of their peers"

Every year, scores of new additives . . . new feed ingredients . . . are born. All of these new additives merit the attention of the feed industry.

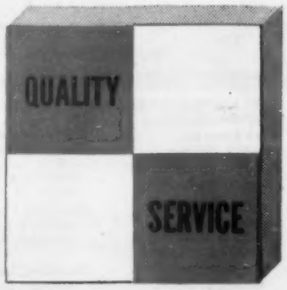
In order to fully, and properly, evaluate new feed additives, Purina has built one of the largest privately owned research laboratories in the world . . . staffed by 228 scientists and technicians. These scientific minds—using the latest diagnostic techniques and equipment—research the steadily increasing flow of new additives. Their initial findings—backed up by observations on thousands of small laboratory animals—are reported. These judgments are respected.

However, these judgments are not final.

*Before any new ingredient—or combination of ingredients—is added to the feed in the Checkerboard Bag, it must be accepted by a better qualified jury . . . a livestock jury.*

This livestock jury lives at Purina's Research Farms. Its job: to decide the fate of new additives, new ingredients, new combinations.

It may take this livestock jury (composed of "average" farm animals) months, possibly years, to digest and weigh all the evidence. But, once this jury reports a "go-ahead" verdict . . . once milling equipment is redesigned and production is geared up . . . farmers throughout the country benefit from the improved feed . . . an improved feed that can be depended upon . . . an improved feed that has been *judged for animals by a jury of animal peers.*




**PURINA . . . YOUR PARTNER IN SERVING ANIMAL AGRICULTURE**

# A Complete Pelleted Ration for Self-Feeding Lambs

**"Self-feeding of lambs is practical. Lambs can be started on a full feed from the first day. Lambs that are self-fed and full-fed, from the first day, gain up to twice the usually accepted figure of ⅓ lb. daily for hand-fed fattening lambs. A complete, balanced, pelleted ration has been the key to this improved method of feeding lambs. It is one of the first real 'breakthroughs' in lamb feeding."**

**By T. W. Perry, W. M. Beeson and Claude Harper**
**Purdue University**

The past 15 to 20 years have witnessed rapid changes in feeding and management methods of the red-meat animals under farm conditions. Changes, in the main, are the result of research findings uncovered in the field of animal nutrition.

Probably more changes have been brought about in the field of swine nutrition and management than for beef cattle and sheep, although very recently such discoveries as antibiotics, hormones, improved supplements and improved self-feeding methods have had a definite impact on beef cattle feeding methods.

On the other hand, sheep nutrition and feeding methods have not been altered substantially for several decades. This can be attributed to the fact that research into fundamental nutritional requirements for lambs has not been as intensive as is the case for swine and beef cattle.

Research started at Purdue several years ago was designed along the lines of recent beef cattle and swine research in that some revolutionary techniques were applied. For example, we have assumed in the past that getting feeder lambs up to a full feed was a process that involved a great number of hazards and that unless extreme cautions were employed lambs would go "off feed" easily and thus much time in the feed lot would be lost. Furthermore, the process of self feeding is not widespread.

*EDITOR'S NOTE: The new lamb feeding development described in the accompanying article is, according to Dr. Perry, "one of the first real 'breakthroughs' in the lamb feeding business that has occurred in the past 25 to 30 years." He indicates that work at Purdue with the complete pelleted ration has shown it to have many distinct advantages over hand feeding methods, and it is expected to become a definitely-established practice.*

But why must the process of bringing lambs up to a full feed be so tedious and why is the practice of self feeding something to read about, but seldom practiced? Research was initiated at Purdue to see whether lambs could be started on full feed —and at the same time self fed—the first day they were turned into the feed lot. It was felt the key to such a feeding plan was the proper balance of nutrients.

Three years research with feeder lambs has shown the following:

1. Self feeding of lambs is practical.
2. Lambs can be started on a full feed from the first day.
3. Lambs that are self fed and full fed, from the first day, gain more rapidly than the usually accepted figure of ⅓ lb. daily for hand fed fattening lambs.

**PELLETED, BALANCED RATION IS THE KEY:** A complete, balanced ration mixed together and pelleted has been the key to this improved method of feeding lambs, which has removed many of the hazards of lamb feeding and which has resulted in increased rates of gain.

Research conducted in 1955 indicated the type of roughage included in the pellet was of importance. In the pellet used in the 1955 studies, the sole source of roughage was dehydrated alfalfa meal. Lambs fed this pellet developed excessively loose droppings and it was necessary to add some medium to poor quality hay to the ration in order to get the lambs back "on feed." Therefore, subsequent pellets were designed to contain some poorer quality roughage, such as ground corn cobs, plus a smaller percentage of dehydrated alfalfa meal.

For the past two years a ration, pelleted into ¼ in. pellets, of the composition shown in Table 1 has been fed:

**TABLE 1. PURDUE LAMB "50" PELLET**

| | % |
|---|---|
| Ground corn cobs | 39.5 |
| Dehydrated alfalfa meal (17%) | 20.0 |
| Ground yellow corn | 32.0 |
| Soybean oil meal | 7.0 |
| Iodized salt* | 0.5 |
| Steamed bone meal | 1.0 |
| Vitamin A & D concentrate** | .075 |
| | 100.075 |

*One ounce of cobalt carbonate per 100 lb. salt.
**Gives 1,700 units vitamin A and 212 units vitamin D per lb. of ration.

The results from two trials from feeding the Table 1 pelleted rations


# How Du Pont helps you sell feeds containing TWO-SIXTY-TWO®

FEED COMPOUND

DU PONT advertisements like the one on the right are telling dairymen that the top purebred herds in the country are fed rations containing "Two-Sixty-Two."

This Du Pont ad is appearing in "Hoard's Dairyman" and other leading farm publications. It features the Maiden Hill Ayrshire herd, one of the largest and most outstanding purebred herds in the country, a herd that is fed a dairy ration containing "Two-Sixty-Two."

Leading herds of the other dairy breeds will be featured in a continuing series of advertisements to dairymen. All of them will back up your sales effort by telling dairymen about the success achieved in feeding rations that include "Two-Sixty-Two."

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

• The Blackadars of Maiden Hill Farms, Inc.—Harry, center, and his four sons who share in the management. Each has his own specialty.

• A portion of the Maiden Hill Ayrshire herd that recently produced 10,610 pounds of milk and 435 pounds of fat M. E. Owned by Harry Blackadar, this farm uses good breeding, careful management, good pastures like that shown here, and dairy rations which include Du Pont "Two-Sixty-Two" feed compound to produce an excellent record of success.

*How the Blackadars practice*

## Family Farming at Maiden Hill

Some thirty miles north of Boston, the Blackadar family operates the well-known Maiden Hill Farm, a successful 450-acre business of cows and chickens. Each of Mr. Blackadar's four sons is responsible for some phase of this diversified operation.

Albert Blackadar handles the hatchery and laying operation, Dexter is the mechanic and Vernon has charge of the purebred Ayrshire herd and retail milk route. Arnold, still in school, is most interested in the latest addition to Maiden Hill—twelve white-face Herefords.

**175 Purebred Ayrshires**

The Maiden Hill Ayrshire herd is one of the largest and most outstanding herds in the country. From Maine to Florida, Maiden Hill Ayrshires have been consistent champions at state and national shows. Maiden Hill has also won eight Constructive Breeders Awards —the highest recognition possible from the Ayrshire Breeders' Association for outstanding performance—both in type and production.

**70 Cows Average 10,610 lbs. Milk**

The latest herd average, based on seventy cows, was 10,610 pounds of milk and 435 pounds fat M. E. The milking herd is fed a 16% dairy ration containing 1% Du Pont "Two-Sixty-Two" feed compound, a top-quality urea source of protein. In dairy feeds, "Two-Sixty-Two" not only provides an efficient source of protein, but also helps unlock extra nutritive values in stimulating rumen bacteria which break down feed fibers in roughage.

As the Blackadars have done, ask your feed supplier to include Du Pont Two-Sixty-Two® in your dairy supplements.



• Typical of the champions that comprise the Maiden Hill Ayrshire herd is Maiden Hill's Master's Lola. Ohio State University, holds "Lola," which was a class winner at the Eastern States Exposition.

DU PONT
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BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

**For dependable service, prompt delivery order "TWO-SIXTY-TWO" from your nearest agent or Du Pont office:**

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Minneapolis, Minn.

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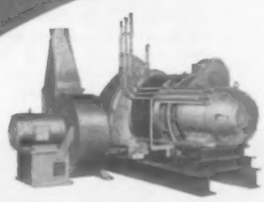

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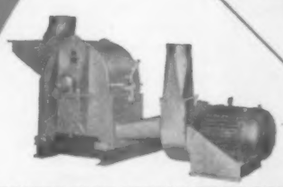

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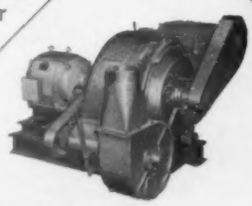

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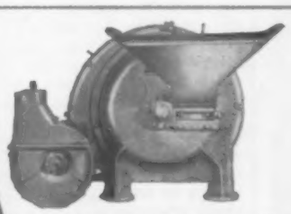

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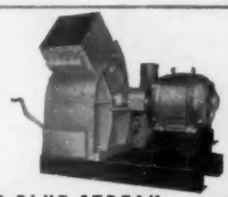

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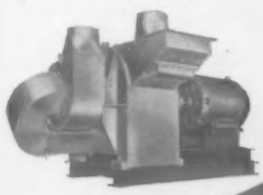

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**TABLE 2**

| | 1956-57 (47 days) | 1957-58 (60 days) No DES | 1957-58 (60 days) 3 mg. DES Implant |
|---|---|---|---|
| Number lambs | 24 | 20 | 20 |
| Initial weight, lb. | 74 | 75 | 74 |
| Final weight, lb. | 109 | 107 | 116 |
| Total gain, lb. | 35 | 32 | 42 |
| Av. daily gain, lb. | 0.53 | 0.54 | 0.70 |
| Pellets daily, lb. | 4.1 | 4.6 | 4.7 |
| Pellets per 100 lb. gain, lb. | 758 | 845 | 668 |

(1956-1957 and 1957-1958) with western feeder ewe and wether lambs are shown in Table 2.

In both trials the lambs were turned into filled feeders the first day and thus were on "full feed" from the first day of the feed lot period. There was no scouring or going off feed. The lambs appeared to be well filled and content any time of the day or night. This observation is substantiated by the rapid and efficient gains attained by lambs being fed the pellet. During the first 14 days the lambs gained 1.6 lb. per head daily.

Many lamb feeders feel that feed remaining in the trough from the previous feed should be cleaned out before adding feed. However, no feed was removed from the feeders except for a certain amount of powdered pellets.

Many modifications of the pellet have been tested. In the 1956-1957 feeding trial the following modifications were tested: (1) 7.5% yellow grease, (2) 10% cane sugar, (3) 10% cane sugar plus 7.5% yellow grease, (4) replacing soybean meal with an equivalent amount of dried skimmilk, and (5) replacing soybean meal with an equivalent amount of fish meal (Menhaden, 60%). It can be seen from Table 3 that none of the combinations tested improved the performance of the pellet.

**TABLE 3. 76 DAYS ON FEED**

| | Lot I Regular pellet | Lot II 7.5% yellow grease | Lot III 10% cane sugar | Lot IV 7.5% grease, 10% sugar | Lot V 9% skim milk | Lot VI 5.1% fish meal |
|---|---|---|---|---|---|---|
| Number lambs | 24 | 24 | 24 | 24 | 24 | 24 |
| Initial weight, lb. | 74 | 73 | 72 | 72 | 73 | 72 |
| Final weight, lb. | 109 | 100 | 108 | 102 | 104 | 102 |
| Total gain, lb.* | 35 | 27 | 36 | 30 | 31 | 30 |
| Daily gain, lb. | 0.53 | 0.40 | 0.54 | 0.45 | 0.47 | 0.44 |
| Pellets, daily | 4.1 | 3.5 | 4.0 | 3.5 | 3.9 | 3.5 |
| Pellets/100 lb. gain, lb. | 758 | 873 | 747 | 771 | 827 | 797 |

*Least significant difference for gain: 5%, 3.59 lb.; 1%, 5.2 lb.

**Summary**

1. What is probably the first real "breakthrough" in lamb feeding has been the development of a complete mixed ration pelleted into a ¼ in. pellet.

2. The advantages of a pelleted complete mixed ration for feeder lambs are:
   a. permits self feeding
   b. eliminates hazards of bringing lambs up to a "full feed" since lambs are on full feed the first day
   c. results in increased gains
   d. well adapted to automation
   e. eliminates sorting of feeds and nutrients
   f. permits the simultaneous feeding of a balanced ration
   g. allows the proper content of grain to roughage ratio
   h. cuts down or eliminates digestive disorders and over eating disease.

3. Apparently the pellet is balanced in about the right proportions since the addition of yellow fat, cane sugar, dried skimmilk or fishmeal failed to improve either rate of gain or efficiency of feed utilization.

4. The presence of approximately 40% of a poorer roughage, such as ground corn cobs, appears to be essential since too high a quality of roughage material caused scouring and poor gains.

## Arsanilic Acid Helps Egg Output in Tests

EAST LANSING—Poultry nutrition research conducted recently at Michigan State University indicates the possibility of adding arsanilic acid to layer feed to maintain or even boost egg production of birds on low-protein rations.

Researchers Charles Pope and Dr. Philip Schaible checked the egg-laying performance of birds on (1) a normal, 17% protein ration, (2) a low-protein feed, and (3) a low-protein feed to which they added a "pinch" per ton of arsanilic acid.

Birds getting the low-protein ration, plus the arsanilic acid, outproduced all other groups. They averaged 135 eggs in a 195-day test, the scientists report.

Layers getting the normal protein ration came in second, turning out an average of 129 eggs during the test. Birds on the low-protein ration alone, produced a naverage of 121 eggs during the 195-day period.

Broiler producers are using some of the drug in their rations and are getting growth responses, say the Michigan scientists. But just why arsanilic acid helps boost egg production of layers on the low-protein rations is still a mystery to them, they say.

They emphasize that protein definitely is necessary for top egg production. But where it is short, the drug can help carry part of the load. Should protein become more costly, it may be advantageous to substitute some arsanilic acid for protein, but the scientists say they aren't recommending this, at least not now.

They urge caution in any consideration along this line of substitution. It takes a ration properly balanced with different proteins to stimulate and keep egg production high, and one might too easily tend to cut out the most expensive protein, which could cause an imbalance. The mixing process also needs to be carefully controlled, the poultry researchers conclude.

## Feed Tech Nominating Committee Appointed

ST. JOSEPH, MO.—A nominating committee has been appointed by Dwight Dannen, Dannen Mills, St. Joseph, to select a slate of seven new members and officers for election to the Feed Tech Advisory Committee. Mr. Dannen is chairman of the committee.

Hugh Dermondy, Chas. Pfizer & Co., has been named chairman of the nominating group. Other members are Charles Hopkins, E. C. & W. L. Hopkins, Greenfield, N.H.; Bruce K. Conover, Jr., Maritime Milling Co., Buffalo; R. D. Jackson, Jackson Grain Co., Tampa; Dr. J. E. Hunter, Allied Mills, Inc., Chicago; George P. McCarthy, Allied Mills, Inc., Atlanta, and C. Grattan Lindsey, Jr., Lindsey-Robinson & Co., Roanoke, Va.

The nominations will be proposed at the annual meeting of the Feed Tech Advisory Committee at the Morrison Hotel, Chicago, May 23.

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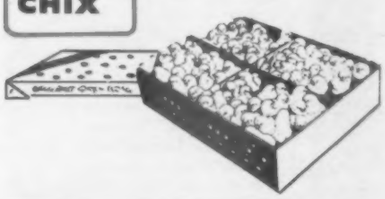
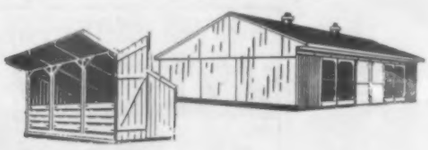


FARM BUILDINGS



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# Some Relief for Railroads Likely During This Session of Congress

By JOHN CIPPERLY
Feedstuffs Washington Correspondent

WASHINGTON — The onrushing financial crisis facing the nation's railroads is compelling Congress at this session to provide some temporary measures of relief. For the past three weeks the interstate commerce committees of both chambers have been hearing testimony on the position of the railroads and the outlook for the entire national transportation picture.

The White House recently added its contribution to aid recommendations in the form of a request that Congress provide approximately $700 million of loan funds to the carriers, a recommendation which a subcommittee of the Senate Interstate Commerce Committee approved in its report on hearings to the full committee.

The initiative for carrier aid has been taken by the Interstate Commerce Commission following statements made to Congress by leaders of most the big Class 1 railroads citing the acutely desperate financial outlook they face. The major point of aid that the railroads ask is drastic relaxation of ICC controls over rate making to permit the carriers to compete with other forms of transport such as water-borne and truck traffic, which they claim are the beneficiaries of the direct form of governmental aid. This aid includes the construction of modern highways and availability of internal water facilities which give these competing facilities an advantage over the railroads, their officials contend.

The basic request of the railroads represents so radical a shift in regulation policy over these carriers that it is doubted that the request can be throughly discussed and acted upon by Congress at this session. In fact, the Senate subcommittee on transportation said as much in its report.

However, the subcommittees of both chambers are looking with varying degrees of favor on changes in the ICC act at this session to modify provisions regarding the agricultural motor truck haulers' exemption, controls over private carriage and repeal of the three per cent excise tax on all freight no matter what carrier is used.

The first of these subcommittees to act was in the Senate where the subcommittee report has been made public. (Feedstuffs, May 10.)

The subcommittee also requested the Senate Finance Committee to examine the issues surrounding the three per cent excise tax on freight movement by all carriers and asked that it be repealed. This tax was introduced as a war measure but has grown in importance as a revenue producer. Opponents of the tax see no half-way relief as adequate. It has been repeatedly contended that the tax is basically discriminatory on goods and commodities produced at great distances from their markets where the imposition of the tax creates a larger impost on the shippers most distant from a market, although the product may be equal or better in value than that from a nearby point. The freight excise tax is particularly vicious when applied to agricultural commodities and in the case of private carriage dangerously discriminatory, since the private carrier operating under the ICC designation of "illegal carriage" is able to circumvent any payment of this tax with complete legality.

The Senate approach seems most likely to prevail in Congress with its subcommittee headed by influential George Smathers (D., Fla.). On the House side Oren Harriss (D., Ark.) is the subcommittee chairman. Mr. Harriss is known to have a sympathetic view to the carriers but this sympathy does not extend itself to a "charitable" approach.

It seems probable that final action at this session is most likely to follow the pattern established in the Senate subcommittee report. Any controversy on these issues will probably center in attempts to restrict the agricultural exemption.

Dale Hostetler Frank Clark

**NEW POSITIONS—Ralph E. Dower, Toledo, Ohio, divisional sales manager of Wirthmore Feeds, has announced that Dale Hostetler has joined the firm's livestock service department, and Frank Clark has been transferred from swine service work in New England to assist in the development of swine feed sales in western Ohio. Mr. Hostetler is a graduate of Michigan State University, and has been associated with the Federal Land Bank and with Adrian (Mich.) Grain Co. He will be located in southeastern Michigan. Mr. Clark is an animal husbandry graduate of the University of Massachusetts. He joined the firm in 1949 as a swine serviceman.**


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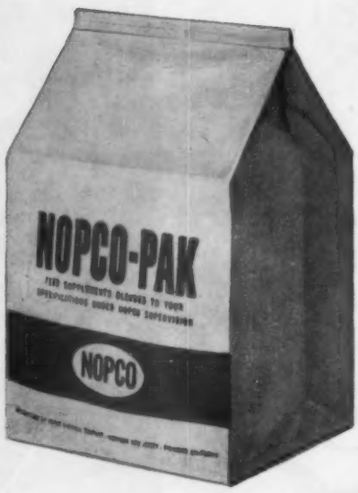


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See Page 57

## Fat-Enriched Soybean Meal Being Exported

MILWAUKEE, WIS. — Standard fat-enriched dehulled soybean meal, a product of the Standard Feed & Fertilizer Co., Milwaukee, is being shipped to feed mixers in several foreign countries as well as the U.S., according to Melvin Bernstein, vice president of the Milwaukee firm.

The product consists of 20% stabilized animal fat and 80% dehulled (50% protein), solvent extracted soybean oil meal.

## Wins C-C Citation

DECATUR, ILL.—The A. E. Staley Manufacturing Co. has received a merit citation from the U.S. Chamber of Commerce for promoting economic understanding. Competing with firms of more than 2,500 employees, the Staley firm was given the award for the effective use of communications to employees.

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"That's your reward for being a gentleman," the girl murmured.

"Reward?" scowled the young man. "That's just workman's compensation."

◆ ◆ ◆

A youngster came into class one morning with a large bump on his head.

"Goodness, Johnny," commented his teacher. "What on earth happened to your head?"

"Oh," answered the lad, "that's where Daddy helped me with my arithmetic last night."

◆ ◆ ◆

A young college freshman wrote home to his father: "I've decided to quit school and get married. I'm engaged to a peach."

In due course, he received this reply: "Suggest it would be wise to take my advice and leave the peach to its parent stem until you are able to preserve it."

◆ ◆ ◆

"After all, you can't take it with you," said the exasperated salesman who was trying without success to sell a grand piano to a wealthy old lady. She replied: "I can take it with me easier than a grand piano."

◆ ◆ ◆

One small boy to another at a wide-screen movie: "Let me know if anything happens on your side."

◆ ◆ ◆

A dear little lady was browsing around one of the better pet shops in San Francisco.

"Are you looking for anything in particular?" asked the clerk.

"Yes," was the eager reply. "A parrot."

"Well, here's a real buy," cried the salesman. "Only $300 and he recites poetry, sings the Star-Spangled Banner and counts to 100. He also does a fine tap dance."

"Oh, don't bother me with the details," snapped the old lady. "Is he tender?"

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# RESEARCH IN AGRICULTURE

**Basic research is becoming an absolute essential in agricultural research work. Research has been shifting increasingly from a pattern in the applied field to a pattern that is of necessity more and more basic. New basic studies in animal science will take various directions. To carry out this work, students with better basic scientific training and new techniques will be needed.**

**By Dr. George K. Davis**
**University of Florida**

*EDITOR'S NOTE: The accompanying article deals with the important subject of the current status, trends and likely future developments in agricultural research. The author advises feed nutritionists and others that when they think of agricultural research, they include not only the applied research program, but also the basic research which will make possible further, even greater, advances. This article is from a talk by Dr. Davis at the Maryland Nutrition Conference—a talk regarded by fellow scientists as being of major interest and importance to industry and college researchers, feed men and others. Dr. Davis is professor of nutrition at the Agricultural Experiment Station, University of Florida, Gainesville.*

Not so long ago, there occurred an explosion on our campus, and it caused about $5,000 worth of damage. No one was hurt, several people were badly scared and some staff and graduate students were forced to re-evaluate a chemical reaction.

Now in a pre-atomic blast, pre-Sputnik era, in another university, there was an explosion that did at least as much damage and I know that I, for one, was badly scared. Further, I know that there was a reevaluation of the potential of an ether explosion. As a result of this earlier explosion, a small item appeared in the local paper, and no one thought much more about it, because no one could imagine anything very extraordinary about an explosion in a refrigerator that blew off the door and generally shattered the wall and surrounding building.

Marvel now at what happened after the recent explosion on our campus. As you can imagine, a newspaper reporter appeared on the scene to find out what had happened. It was reported that an autoclave in which a chemical reaction was going on exploded. The reporter in writing up his story said that the lid of the autoclave "took off like a rocket" and went through the adjoining wall and embedded itself in the wall across the room. Now this seems innocuous enough, but when this report was read by a member of the staff in an office in the state capitol, this became an explosion in which a student was experimenting with rocket fuel and a rocket had taken off in the building and of course endangered many lives.

Then because it is well known that we have been working with nuclear reactions and radioactive materials, when the story was reported to the State Cabinet, a reporter related that students at the university had been experimenting with nuclear fuel for rocket propulsion and that in such an experiment, an explosion had gone off and had caused the rocket to penetrate the walls and only the greatest good fortune prevented a general catastrophe. Now, of course, the story was given general publicity, with the result that the company which insures the buildings on the campus and elsewhere in the state, immediately contacted the State Cabinet and proposed that insurance on the buildings be cancelled because of the nuclear reactions which were being carried on in them. They as an insurance company had no desire to be caught insuring a possible atomic explosion.

### Took Some Explaining

It took a considerable amount of explaining, a great deal of effort on the part of many very busy administrators, and quite a few of the "Indians" who work around the place, to assemble all of the facts related to safety, etc., to convince the State Cabinet that we were not in effect endangering the whole vicinity. And we still have in the state a number of people who are not at all sure that we are not endangering the lives of all the students there, by working on possible nuclear blast material.

This story has caused a great deal of amusement on our campus and in the state, but it does point out that what you expect makes a great deal of difference in what you observe or hear or believe when you consider a public release of information, whether this be connected with an explosion or with a research project in agriculture.

If I were to ask you what kind of research you expected to come out of the experiment stations of this country, I imagine that in most cases the answer that I would receive would indicate that you are expecting research in an applied field. Traditionally, research in agricultural fields has been applied research. You are not surprised when you read that a new antibiotic has been fed to swine or to poultry or to cattle in a research experiment at the Iowa Agricultural Station or at Purdue or at Oklahoma or at Washington or at Maryland. This is what you expect,


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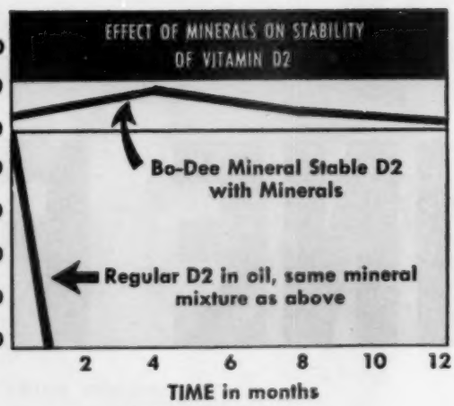


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But if from any one of these experiment stations there should be reported that an investigator has developed a basic principle in heart function or a cure for an arthritic condition, most of you would wonder how an investigator in an agricultural field happened to be working on such a project in the first place; perhaps you would be quite skeptical of the results because there was not connected with this work the words "medical research." For you see, you do not expect research in medicine or in basic physics or in chemistry or in fundamental biology to come from an agricultural experiment station.

**Basic Research Essential**

Yet I would like to discuss the pattern of research in agriculture as it is developing and the fact that while applied research still makes up the great volume of experimental work being reported from the agricultural experiment stations, today, more than ever before, basic research is becoming an absolute essential in agricultural research work. And the results which are reported are just as likely to be important in fields far removed from the traditional agriculture as they are in the agricultural field itself.

Let me give some examples of the way in which fundamental investigations have stemmed from practical applied research in some of our agricultural experiment stations. I am sure that you are aware that for many years we have had feeding trials. More recently these feeding trials have been concerned with the use of such products as hormones, antibiotics, various new drugs and the feeding of different mineral supplements. Feeding trials have been used much longer than any of our agricultural experiment stations, as we know them today, have been in existence.

About 25 years ago, it was discovered in Australia that feeding a limonite supplement to sheep had a very beneficial effect on their performance. Somewhat later, it was discovered that the beneficial element in this product was cobalt. Subsequent to this, a number of experiment stations engaged in feeding experiments in which cobalt was used as a supplement. More particularly such products as cobalt chloride, cobalt sulfate, cobalt acetate were all fed in varying amounts to livestock and the response was observed. It was further observed that cobalt was effective in ruminants but did not appear to be effective in poultry or in swine. Some trials were made with humans, with but little success, and the clinical results were very confusing.

You know that about 1948, report was made of the isolation of vitamin $B_{12}$. The subsequent knowledge that vitamin $B_{12}$ contained cobalt placed unusual emphasis upon the role of this element in nutrition.

Up to the point where cobalt was identified as a part of a vitamin, the research of cobalt had largely been that of feeding trial experiments. There were a number of experiments just prior to the discovery of vitamin $B_{12}$ in which radioactive cobalt was fed to animals and the radioactive cobalt then isolated from varying tissues and an investigation made of the compounds of cobalt found in these tissues. There were also experiments which showed that injected cobalt was readily eliminated from the body by way of the kidney as opposed to the intestinal tract, but these were comparatively minor in the general applied research program which had developed.

Subsequent to the discovery of vitamin $B_{12}$, while there was a considerable multiplication of research on the feeding of vitamin $B_{12}$ itself, a great amount of research was devoted to the role of vitamin $B_{12}$ in cellular metabolism. As of today from agricultural experiment stations and from other research stations as well has come information showing that vitamin $B_{12}$ is concerned in the shift of methyl groups from methionine to choline, and vitamin $B_{12}$ probably is closely tied in with the development of antibodies and certainly is closely allied to growth (protein synthesis). We have now progressed all the way from the applied feeding trial type of experiments in an agricultural experiment station to work in an agricultural experiment station in which the basic study is that of intermediary metabolism, or if you will, the chemical reactions which occur within a single cell of the body. This becomes basic research in its most fundamental form when it points directly towards knowledge of how cells function, which must eventually evolve.

**Moved to Fundamental Research**

There are many other examples which I could use to show how research has moved in agriculture from the feeding trial basis to the fundamental research of cellular metabolism.

Let me trace still another group of compounds. The early work on vitamin D, the requirement for vitamin D, the formation of vitamin D in the body, and the role of this vitamin in metabolism to a considerable degree came out of agricultural experiment stations. I am sure you are well aware of the work that was done at the University of Wisconsin, at the Connecticut Agricultural Experiment Station and many other experiment stations throughout the country on the role of vitamin D, the various forms of vitamin D and the place vitamin D has in nutrition.

For a considerable time after this early work, which might well be considered basic in its nature, research with this vitamin became a matter of feeding the various sources of the vitamin and observing response of animals to the incorporation of different levels from different sources in the diet. There were some investigators, however, whe remembered that vitamin D is, after all, a sterol and the sterols are a vital part of our animal metabolism. From this work with sterols it is not surprising that there have developed investigations of the sterol products within the body, and presently out of this research has come information about hormones and fat metabolism. Now the pendulum has swung completely back to basic research on the action of the compounds within the animal body, within animal tissue, and their relationship to such very fundamental research as that of cell changes.

I am sure that you, informed as

Dr. George K. Davis

you are of the problems facing our country in the fields of research, realize that in agricultural research institutions as well as in educational institutions all over the country, there is a great lack of students who


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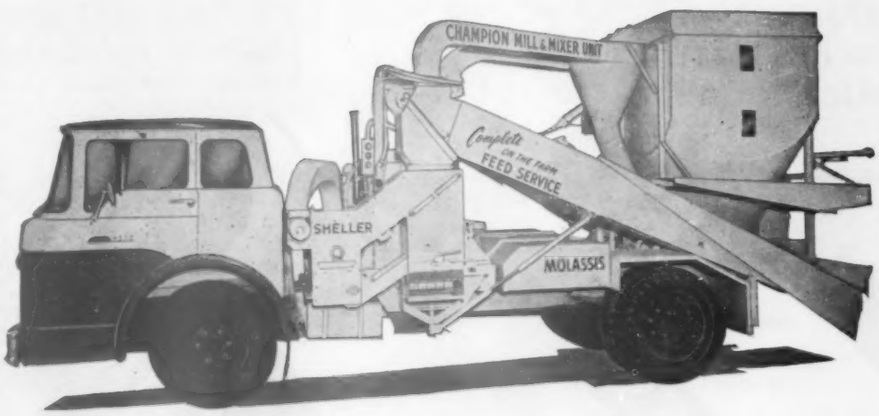


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are adequately trained to go into basic research. No longer can the student who graduates in a course in animal husbandry or agronomy be considered adequately trained to engage in fundamental research in the fields which are of great importance to you. Such a background may give a student orientation, but basically the student who enters research today in the field of agriculture must be trained increasingly in chemistry, in physics, in advance biology, in physiology and in those fundamental sciences which are traditionally associated with basic research.

Research today is moving evermore toward fundamental investigations. In plants the swing is to cellular biology and to the metabolism of single cells. In animals, research is swinging to the metabolism of individual components such as the fatty acids, and in fact to the changes in structure, minute though they may be, in the different fatty acid compounds and in the amino acids, and in the sugars, in the various special compounds, the hormones, antibiotics, vitamins and drugs. More important than the individual compounds are the mechanisms by which these individual components are converted from feed to tissue in the animal body.

**Equipment Needs**

I do not consider myself old, either in terms of research or in terms of chronological age, but I can remember that when I began my research work, my laboratory was well equipped if I had chemical glassware and a good microscope. In fact, the securing of an ultra centrifuge was a major event, and we announced this to the entire community, inadvertently, by running it on the fourth floor of a building which served as a sounding board for this particular piece of equipment.

Today a well qualified investigator in the animal sciences, finds that he requires a knowledge of the use of radioactive isotopes because he will be working with isotopes as tracers. I can point out here that, increasingly, use of isotopic tracers has served as a tool not only to indicate the presence of a peculiar or a particular element within a compound, but also to trace these compounds in their various chemical reactions and even to give an idea of the location of a specific compound within the various components of a cell.

In addition to the use of radioactive isotopes, a modern investigator is going to have to be equipped to do chromatographic studies, using both columns and paper. This technique has provided a marvelous tool for separating compounds which could not otherwise be separated and in combination with radioactive isotopes provides a very useful way of identifying the location of various components or compounds that can be separated.

How else can one separate the various proteins of a sample of blood serum efficiently than by the use of electrophoresis? Electrophoresis was known many years ago, but by virtue of the introduction of new techniques, has become invaluable in investigations of animal metabolism. I could go on almost indefinitely naming new techniques and new equipment which are in use today and which were not in use 20 years ago, and point out that unless our investigators in the field of agriculture are conversant with these techniques, no longer are they able to maintain a satisfactory level of research development.

These trends in research in agriculture are to the good. We as humans both contribute and benefit from this type of research. Studies with animals certainly open the avenues of research in humans, and vice versa, discoveries in human physiology, medicine and pathology often have a very marked and valuable application in our animal and indeed in our plant studies. You who support agricultural research in the universities should recognize these changes and expect and support them.

**Research in the Future**

Too often we get so busy doing things that we forget to think about what we are doing and about what we should and will be doing in the months and years ahead. But, it is the privilege of every investigator to sit down once in a while and dream about what might and probably will happen in the years ahead in the research field. My field is that of research in animal nutrition, and if I have a peculiar bias toward this subject, I trust you will forgive me since I know that an investigator in plant science might produce a very different estimate of what may happen in future research in his field.

I have pointed out that research in agriculture has been ever increasingly shifting from a research pattern that was in the applied field to a research pattern that is of necessity more and more basic in its investigations. From this research in years ahead, I believe that there will be an increasing shift of research in the animal sciences toward ruminant nutrition and away from such a pattern of investigation as might be called "making pigs" of our cattle. In other words, we are going to be more and more concerned with ruminant animals which are less fat and more lean. This is going to involve producing tender, juicy steaks from the old cow as well as from the young steer.

Now before this occurs there is going to have to be considerable amount of basic research. Some of this has already been undertaken and may well be on the way toward solution. For one thing, it is going to be necessary to produce forage that has more protein in it. Furthermore, it is going to be necessary to produce higher protein in forages that ordinarily are quite low in protein. Whether this will come from spraying on non-protein nitrogen sources, whether it will come from changes in our soil micro flora, I do not know, but this will come and will have a marked influence upon the growth and development of our livestock.

Because the steak from the old cow is inherently tough, it's going to be necessary to do a considerable amount of basic research on cellular metabolism to discover how to tenderize this meat so that you will be willing to eat it, and, in fact, will not be able to tell the difference between this steak and the steak which

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## NON-SACK DRESSES MADE OF SACKS

**COLORADO SPRINGS—The trend in women's fashions to "sack" style dresses was reversed at the El Paso County extension club fashion show recently at the City Auditorium, Colorado Springs. The show featured non-sack dresses made from sacks. The garments, styled from print feed bags, were loaned to the extension club members—who modeled them—by the National Cotton Council. Styles ranged from after-five cocktail dresses to skirted jumpers made from a colorful bandanna print.**

you now identify as having come from a choice, well fattened steer. Put this in another way, increasingly we are going to be interested in producing pounds of animal protein in the form of beef and less interested in producing pounds of beef animal that are in reality fat.

Perhaps it is not too hard to believe that increasingly we will be attempting to make "ruminants" of poultry and swine. We may do this outside of the animals in fermentation vats or otherwise; but as the competition for food between animals and humans increases, this is the logical way for feeding programs to move. You can appreciate the fundamental research that will be required.

### Prevention of Disease

Another direction in which our research will progress, I believe, will be through the prevention of disease by means of nutrition. We are going to be increasingly interested in the mechanism by which disease is produced, the changes which cause cells to react in a pathological manner, and more specifically, we are going to be interested in the compounds in cellular metabolism which protect against the development of disease, or if you will, which lead to disease resistance. With this we will increasingly alter our feeds so that no longer will disease be a major hazard in a feeding operation and very probably research will lead to discoveries that will also enable us to feed animals and protect them from parasites, whether external or internal.

Still another direction in which our basic research will go will be toward increasing emphasis upon protein in our feeding program. The basic research involved in this will undoubtedly include investigations into the role of specific amino acids and to the breakdown products of these amino acids. Eventually we might expect from basic research in this field, a knowledge of how to control the deposition of various animal tissues. In other words, an animal that is "tailor made" as a result of our feeding practice.

I could go on discussing the patterns research may follow. However, I believe that I will do well to stop here and suggest that when you think of agricultural research, include not only the applied research program which has been so productive in terms of improving our agriculture, but also the basic research which will make possible further, even greater advances. Remember that part of this research will be done by students who today are, and should be, encouraged to advance in the fundamental studies of mathematics, of chemistry, of biology, of physics, because it will be through these and through the new techniques, that advances will come.

I hope that you will not hear of explosions in the laboratories where the work is going on, but if you do, imagine that someone has taken another step toward producing better food for that increasing population which we see just a few years ahead of us.

Dr. Raymond F. Shumard

**JOINS LILLY—This is Dr. Raymond Shumard, who recently joined the agricultural research staff of Eli Lilly & Co., Indianapolis. A mixup of pictures and captions on page 59 of the May 3 Feedstuffs inadvertently identified R. E. Synold, nutritionist for the M. D. King Milling Co., Pittsfield, Ill., as Dr. Shumard. Dr. Shumard will conduct research on the control of livestock parasites at the new Lilly Agricultural Center in Greenfield, Ill. He formerly was a staff member at North Dakota Agricultural College and Experiment Station, Fargo.**

## New Mill Equipment Installations Continue

Many feed firms continue to make new mill equipment installations or modernize their facilities. This continuing trend is shown in a recent report from the Prater Pulverizer Co., Chicago.

The report tells of 46 new machinery installations in 16 states in all parts of the country—Ohio, Idaho, Illinois, Minnesota, Iowa, Wisconsin, Kansas, North Carolina, Missouri, Florida, South Carolina, Nebraska, Michigan, Indiana, Texas and Alabama.

The equipment was Blue Streak and Prater brand grinding, mixing and conveying equipment.

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*Dr. Stutts received his B.S. degree in Agricultural Science and his Master's degree in Animal Husbandry and Nutrition from Alabama Polytechnic Institute. His PhD degree in Animal Nutrition was received from the Graduate School at Texas A. & M. College, College Station, Texas. Dr. Stutts is a member of the Poultry Science Assn.; American Society of Animal Production; American Chemical Society; and the American Assn. for the Advancement of Science.*

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## N.W. Association Urges Feed Men to Encourage Ag College Enrollment

MINNEAPOLIS — The Northwest Feed Manufacturers Assn. recently called attention to the need for more agricultural college graduates in the feed and other industries, and the group called on feed men to aid in encouraging greater agricultural college enrollment.

The action was taken in a resolution adopted by the association's board of directors.

The resolution follows:

"Agriculture and related industries annually need 15,000 new agricultural college graduates, while land-grant colleges each year graduate only 8,500 students in agriculture.

"The feed industry, like other industries serving agriculture, is in need of more college-trained personnel in research, production, sales and service in order to continue to grow and develop. However, the number of agricultural students qualified to fill these positions has been declining.

"If the industry is to have an adequate source of trained personnel, it must join others in encouraging more high school students to enroll in agricultural college courses. It must point out to high school students the employment opportunities in the feed and other agricultural industries.

"Farms are becoming fewer, but new careers in agriculture are opening up at a rate undreamed of a few years ago. Agriculture always will mean farming, but it has now come to mean much more. It is the nation's biggest industry. More than a third of all Americans at work are in agricultural pursuits. Nearly 10 million of them are on farms. Another 6 million produce goods or provide services, such as feed, for farmers. Some 9 million process and distribute food and other farm products. There are a quarter million scientists who serve agriculture directly, in research or in other ways. The number of college-trained farmers has doubled in 10 years. There are continually increasing demands for the services of the limited number of agricultural college graduates.

"Therefore, be it resolved that the Northwest Feed Manufacturers Assn. urge all members and others in the feed industry to take every opportunity to show high school students the employment possibilities in the feed and allied industries; to work with 4-H Club and FFA leaders, county agents and others in calling these opportunities to the attention of qualified farm youth; to cooperate with land-grant colleges in encouraging capable high school students to prepare for agricultural careers; to help promote greater agricultural enrollment through literature, talks or personal contacts with prospective students and their advisors and leaders."

## Western Canada Finds New Feed Potential In Grain Screenings

VANCOUVER — A new type of feed, made only of grain elevator screenings pelleted with molasses, may open up a new feeding opportunity for British Columbia range cattle in Fraser Valley feed lots, it is reported.

Currently selling at $15 a ton in carload lots, f.o.b. Vancouver, the new feed puts British Columbia in a position to compete with cheap grain used in Canadian prairie feed lots, according to local spokesmen.

Dr. Alex Wood, director of the animal nutrition laboratory at the University of British Columbia, has for some time been working with the feed, and sees considerable potential in it. He gave reports on it in talks at Montana State College and the University of Minnesota in the past year.

A group of six steers now on test at the university has been making daily gains of 2.7 lb. on 15 lb. of pellets per steer. With 3 lb. of hay added to their daily ration, cost per pound of beef is reported to be 6.6¢ a day, in contrast to current beef prices of 23 to 24¢ lb. on the hoof. The steers went on feed in late November weighing 433 lb. per steer, at eight months of age. They weighed an average of 714 lb. in mid-April, for an average gain of 281 lb. in 140 days.

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### MILL ADDS EQUIPMENT

GENEVA, MINN. — The Geneva Grain & Milling Co., re-opening after a fire last fall, has expanded to include an additional larger mixer, a large egg candling room and refrigerator and a loading platform.


Now...We are proud to announce another great advance in the fish meal industry...

GUARANTEED ANALYSIS

of MENHADEN FISH MEAL and MENHADEN WHOLE MEAL

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you can now buy...

HI-SEAS

Stabilized

MENHADEN FISH MEAL · MENHADEN WHOLE MEAL

(with fish solubles)

with GUARANTEED ANALYSIS of...

OVER-ALL PROTEIN DIGESTIBILITY (pepsin digestibility)

and AMINO ACIDS

plus

GUARANTEED FREEDOM FROM RANCIDITY

Up until this time, the feed industry has not been able to buy Menhaden fish meal on the basis of an analysis of the all-important amino acids. Only protein content could be guaranteed. Today, HI-SEAS is proud to be able to *guarantee* the analysis of every pound of its Stabilized Menhaden Fish Meal and Stabilized Menhaden Whole Meal—for over-all protein digestibility and for individual amino acids.

HERE'S WHAT HI-SEAS CAN GUARANTEE IN EVERY BAG OF FISH MEAL:

- 92% Over-all Protein Digestibility (pepsin)
- AMINO ACID CONTENT (as % of protein)

6.68% Glycine — 8.00% Lysine
3.00% Methionine — 1.08% Cystine

HI-SEAS... first in

Highest Metabolizable Energy Values
Availability of Amino Acids • Fish Growth Factors
Exclusive Anti-Oxidant Process
...and now FIRST with GUARANTEED ANALYSIS

Compare These Amino Acid Percentages with those of other Protein Supplements

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Wildwood, N. J. Sales Division of:

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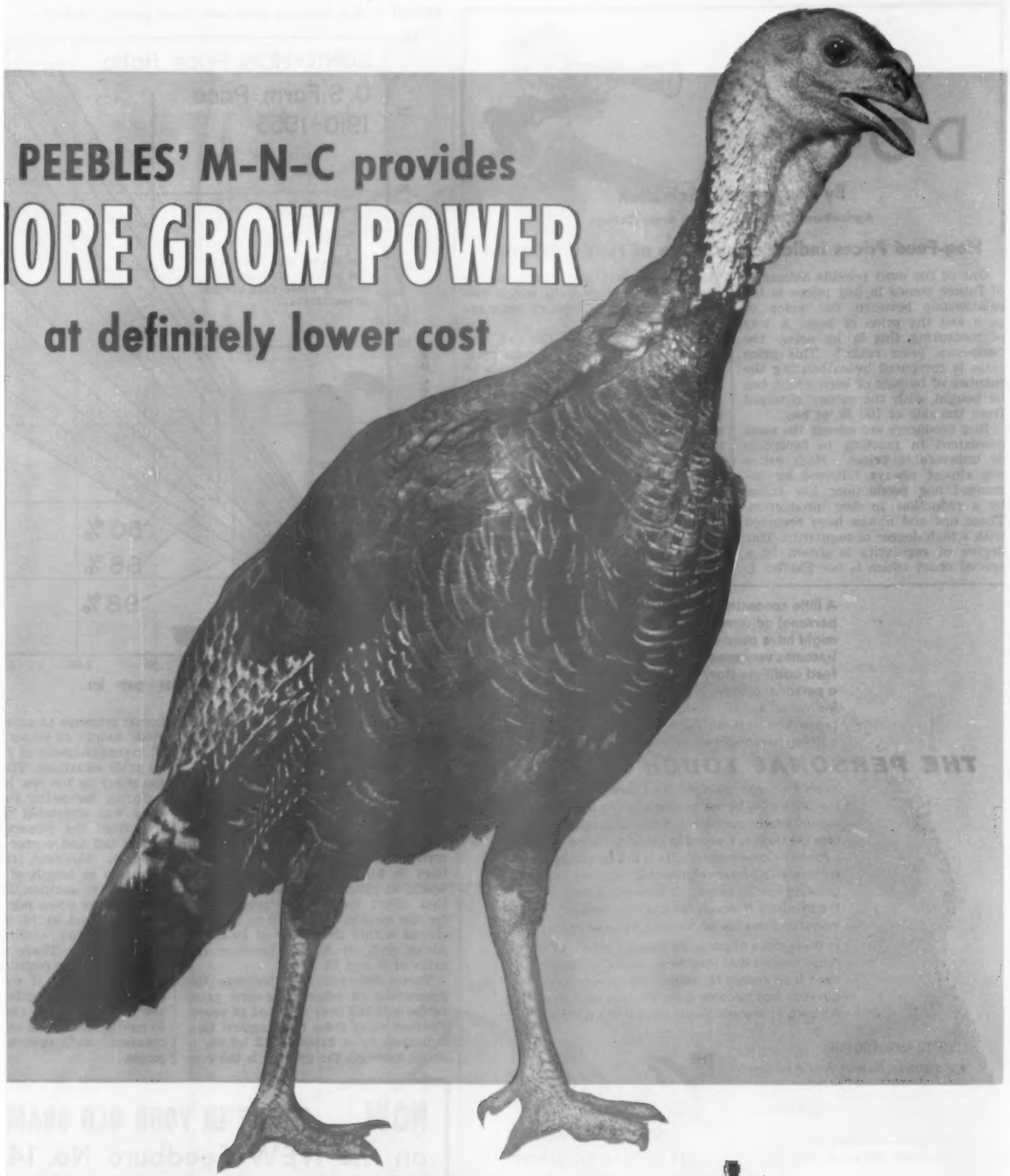
• NEW JERSEY MENHADEN PRODUCTS, Inc. • VIRGINIA MENHADEN PRODUCTS



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**entific concentration adds 50% more nutrients!**

ebles' M-N-C (reduced lactose content) offers you a made order way to step up turkey feed performance...because -N-C is concentrated. It packs more *grow power*—50% re non-lactose nutrients than regular whey.

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**ESTERN CONDENSING COMPANY**
APPLETON, WISCONSIN
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**32 PLANTS** *Coast to Coast*

## N.W. Association Urges Feed Men to Encourage Ag College Enrollment

MINNEAPOLIS — The Northwest Feed Manufacturers Assn. recently called attention to the need for more agricultural college graduates in the feed and other industries, and the group called on feed men to aid in encouraging greater agricultural college enrollment.

The action was taken in a resolution adopted by the association's board of directors.

The resolution follows:

"Agriculture and related industries annually need 15,000 new agricultural college graduates, while land-grant colleges each year graduate only 8,500 students in agriculture.

"The feed industry, like other industries serving agriculture, is in need of more college-trained personnel in research, production, sales and service in order to continue to grow and develop. However, the number of agricultural students qualified to fill these positions has been declining.

"If the industry is to have an adequate source of trained personnel, it must join others in encouraging more high school students to enroll in agricultural college courses. It must point out to high school students the employment opportunities in the feed and other agricultural industries.

"Farms are becoming fewer, but new careers in agriculture are opening up at a rate undreamed of a few years ago. Agriculture always will mean farming, but it has now come to mean much more. It is the nation's biggest industry. More than a third of all Americans at work are in agricultural pursuits. Nearly 10 million of them are on farms. Another 6 million produce goods or provide services, such as feed, for farmers. Some 9 million process and distribute food and other farm products. There are a quarter million scientists who serve agriculture directly, in research or in other ways. The number of college-trained farmers has doubled in 10 years. There are continually increasing demands for the services of the limited number of agricultural college graduates.

"Therefore, be it resolved that the Northwest Feed Manufacturers Assn. urge all members and others in the feed industry to take every opportunity to show high school students the employment possibilities in the feed and allied industries; to work with 4-H Club and FFA leaders, county agents and others in calling these opportunities to the attention of qualified farm youth; to cooperate with land-grant colleges in encouraging capable high school students to prepare for agricultural careers; to help promote greater agricultural enrollment through literature, talks or personal contacts with prospective students and their advisors and leaders."

## Western Canada Finds New Feed Potential In Grain Screenings

VANCOUVER — A new type of feed, made only of grain elevator screenings pelleted with molasses, may open up a new feeding opportunity for British Columbia range cattle in Fraser Valley feed lots, it is reported.

Currently selling at $15 a ton in carload lots, f.o.b. Vancouver, the new feed puts British Columbia in a position to compete with cheap grain used in Canadian prairie feed lots, according to local spokesmen.

Dr. Alex Wood, director of the animal nutrition laboratory at the University of British Columbia, has for some time been working with the feed, and sees considerable potential in it. He gave reports on it in talks at Montana State College and the University of Minnesota in the past year.

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Now...We are proud to announce another great advance in the fish meal industry...

GUARANTEED ANALYSIS

of MENHADEN FISH MEAL and MENHADEN WHOLE MEAL

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you can now buy...

HI-SEAS

Stabilized

MENHADEN FISH MEAL · MENHADEN WHOLE MEAL

(with fish solubles)

with GUARANTEED ANALYSIS of...

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HI-SEAS... first in

Highest Metabolizable Energy Values
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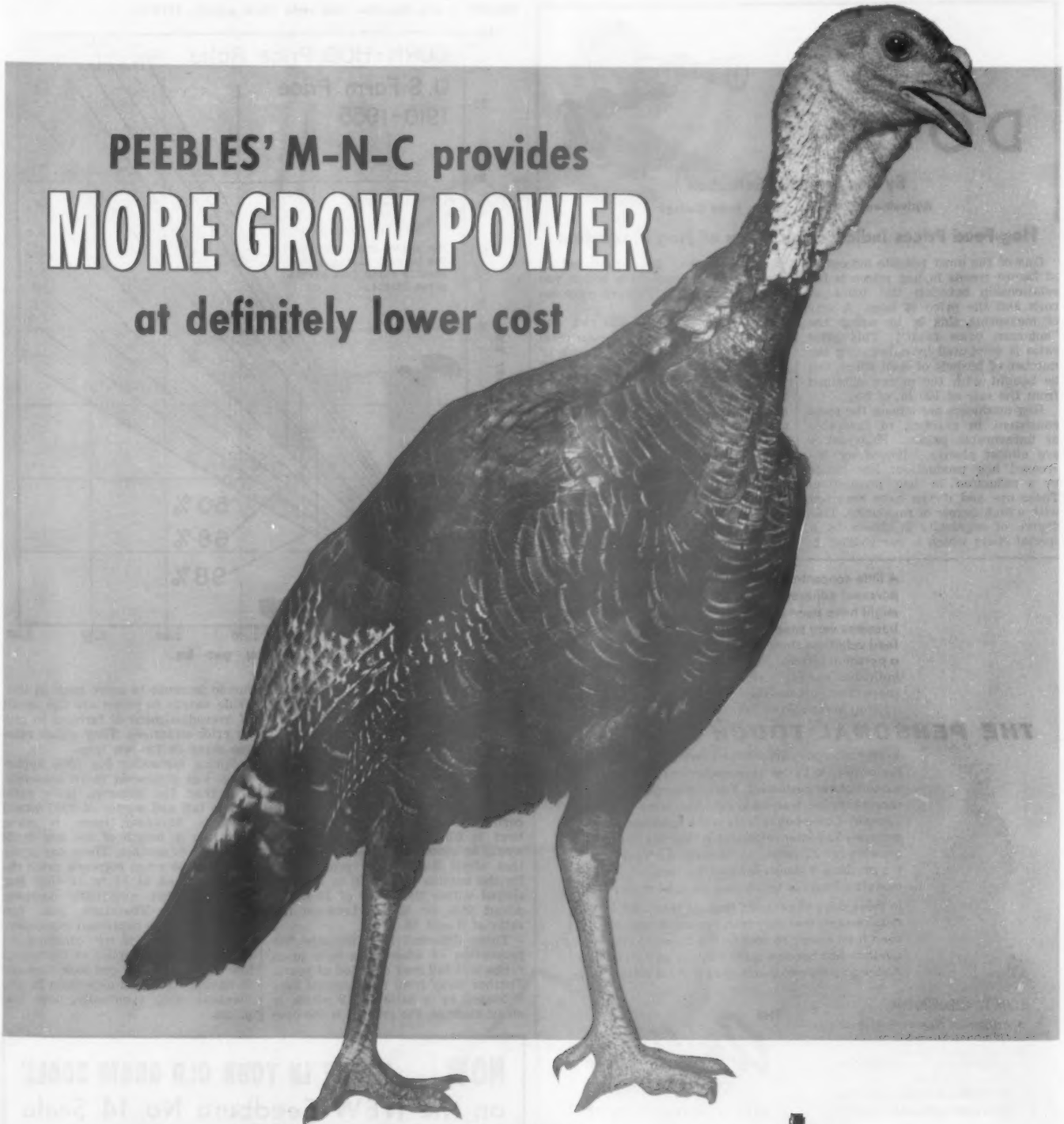
# PEEBLES' M-N-C provides MORE GROW POWER at definitely lower cost



## Scientific concentration adds 50% more nutrients!

Peebles' M-N-C (reduced lactose content) offers you a made to order way to step up turkey feed performance...because M-N-C is concentrated. It packs more *grow power*—50% more non-lactose nutrients than regular whey.

That's why with M-N-C you can mix more efficient turkey feeds at lower cost. Just 2½% M-N-C supplies the same amount of Whey Factor and other non-lactose nutrients as 4% whole dried whey.

Peebles' exclusive spray dried process retains all high activity unidentified growth factor benefits. M-N-C's spray dried texture assures you constant color and uniform distribution in feeds for lower mixing costs. Write or wire today for prices from shipping point nearest you.

**WESTERN CONDENSING COMPANY**

APPLETON, WISCONSIN

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# UP OR DOWN?

By Leonard W. Schruben
Agricultural Economist, Kansas State College

## Hog-Feed Prices Indicate Expansion of Hog Production

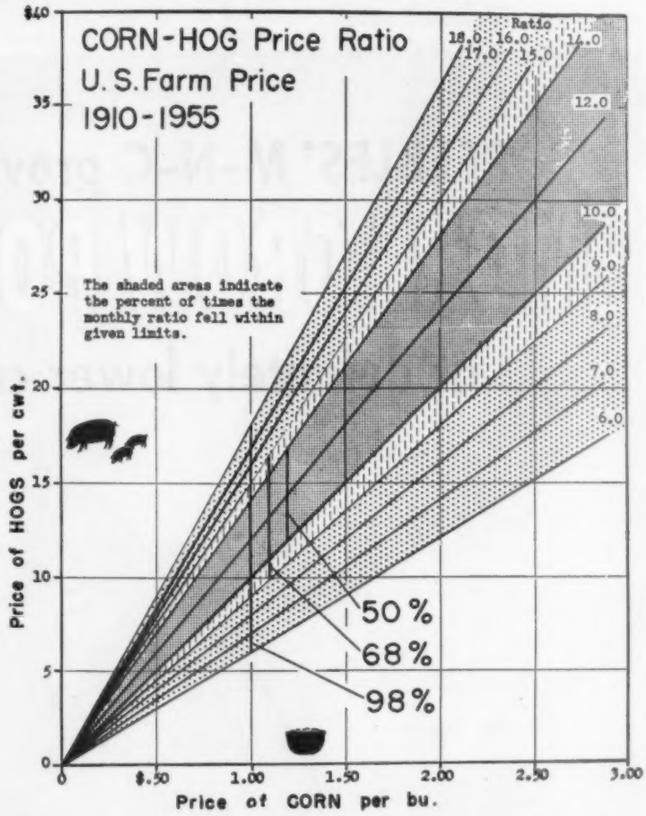
One of the most reliable indicators of future trends in hog prices is the relationship between the price of corn and the price of hogs. A way of measuring this is by using the "hog-corn price ratio." This price ratio is computed by calculating the number of bushels of corn which can be bought with the money obtained from the sale of 100 lb. of hog.

Hog producers are among the most consistent in reacting to favorable or unfavorable prices. High ratios are almost always followed by increased hog production; low ratios by a reduction in hog production. These ups and downs have recurred with a high degree of regularity. This degree of regularity is shown by a special chart which is our Exhibit 1. This article has been prepared to show the frequency with which you can expect certain hog-corn price ratios to appear.

With hogs selling at $20 cwt. and corn at $1.50 bu., the hog-corn ratio would be 13. One hundred pounds of hog would sell for enough to buy 13 bu. of corn. If hogs were selling at $18 cwt. and corn at $1, the price ratio would be 18. The higher the price ratio, the more favorable is the prospect for profitable feed operations. Likewise the inducement to expand hog numbers is stronger.

How long can we expect price of hogs to remain at present levels relative to the price of corn? This question has special significance for the feed manufacturer because it indicates to a degree the farmer's ability to buy manufactured feed and the number of hogs that will be fed.

EXHIBIT 1. U.S. hog-corn price ratio (farm prices), 1910-55.




Here is how you use Exhibit 1. First, you find the price of corn at the bottom of the scale. You read up on this line and locate a point even with the current price of hogs on the left-hand scale. Suppose the price of corn is $1.15 bu. and the price of hogs is $16 cwt. This price ratio would be close to 14. You will notice that about half of the price ratios for the months from 1910 to 1955 occurred within the range of 10 to 14. About 68% or ⅔ fell between the ratio of 9 and 15.

These different lines indicate the proportion of where hog-corn price ratios will fall over a period of years. Further away from the diagonal line, indicated by a ratio of 12 which is about average, the greater is the economic pressure to move back in line. Wide swings in prices are the result of overadjustment of farmers to given price situations. They either raise too many or too few hogs.

Spring farrowing for 1958 apparently was somewhat more conservative than the hog-corn price ratio of the fall and winter of 1957 would indicate. However, there is some variation in length of the hog cycle from one to another. There has never been a time when hog-corn price ratios remained at 14 to 16 that hog numbers didn't eventually increase substantially. Therefore, you can look forward to continued expansion. In other words, if we continue to have abundant supplies of feeds and low feed prices, we can look forward to having continued expansion in hog numbers and, eventually, low hog prices.

A little concentrated attention, a tender, personal adjustment . . . and what might have been a careless appearance becomes very special. And when your feed additives story is presented as a personal picture, planned for your individual needs . . . doesn't it make more sense than "off-the-shelf" selling, *with nothing personalized except the price?*

**THE PERSONAL TOUCH**

With Amburgo, personalized service has been the answer to better business for its feed manufacturer customers. Your Amburgo field representative, trained in nutrition, is no "Johnny-Come-Lately". He is the spearhead of a closely-knit inter-relationship that has been growing for 20 years . . . between Amburgo, the products it stands for and the feed manufacturers for whom they have been designed.

In these days of complex formula feeds, of requirements that vary from region to region, even from county to county, the answer to our question has become quite obvious and clear. The Amburgo personal touch does make a difference.

LOOK TO AMBURGO FOR
- *Advanced Research at Amburgo Demonstration Farm*
- *Nutrition Schools*
- *Dependable, Forthright Service*

AND
VITAMINS—MINERAL PRODUCTS
FEED ADDITIVES and ANTIBIOTICS

THE Amburgo COMPANY, INC.
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HERE'S YOUR OPPORTUNITY TO OWN ONE OF THE FINEST 4-IN-1 GRAM SCALES EVER MADE . . . THE SEEDBURO NO. 14 GRAM SCALE . . . AND SAVE YOURSELF MONEY.

**$44.75** WITH CUP
(Less trade-in allowance of $5.00—your cost $39.75)*

**FASTER MORE ACCURATE**

By simply moving a lever the new Model No. 14 can be changed from a sliding type poise to a positive position notch type poise. Beam is notched at 50 gram intervals which insures absolute accuracy for moisture tests and dockage tests.

*Note: Send us your old Gram Scale for trade-in allowance of $5.00.

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This Offer Will Be Made for Limited Time Only. Order Now. Write Dept. FS5:

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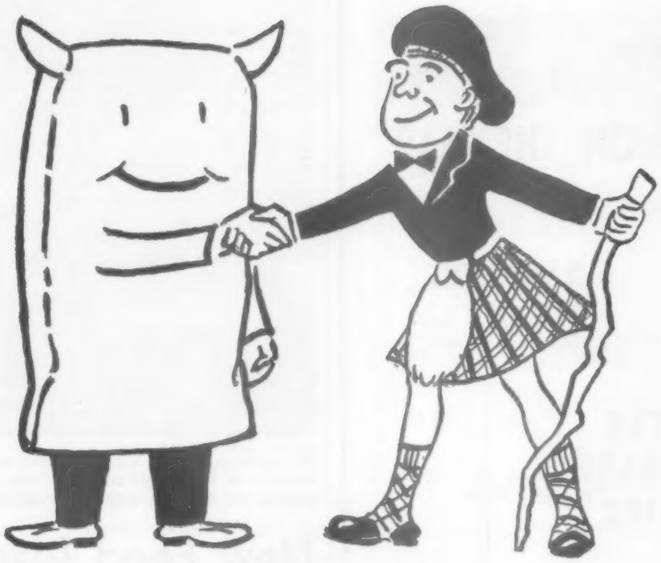
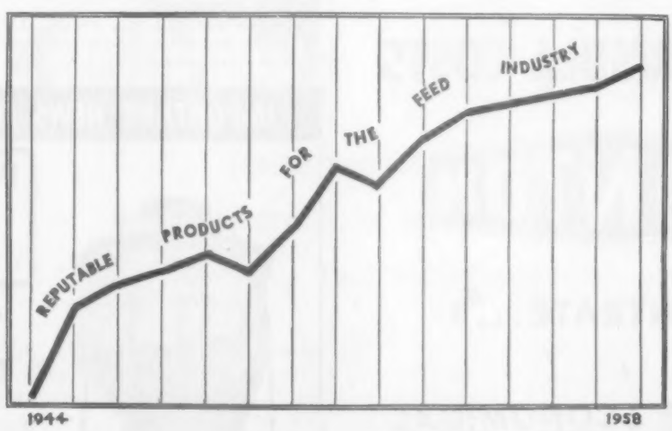


# Congratulations

CONGRATULATIONS to the American Feed Manufacturers Association on its fiftieth year of growth and progress. The amazing expansion of the feed industry could only have resulted from a definite service to agriculture and the American Farmer.

With the feed industry we place our faith in sincere service. "Reputable Products for the Feed Industry" has been our slogan since our firm was founded 14 years ago. Our sales record, charted below, has been made possible by strict adherence to this principle.




We take pride in the fact that we have served so many outstanding feed manufacturers . . . and that we have helped reputable producers of feed ingredients to supply their products to the feed industry. We are grateful to our customers for their continued patronage and faith in us and we pledge continued loyalty to our slogan—"Reputable Products for the Feed Industry."

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**COMPANY**
**DWIGHT BUILDING ● KANSAS CITY 5, MO.**

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T. D. F. Company
Corn Exchange Bldg.
Buffalo, New York
Tel.—Madison 2323
Teletype—BU 484

BETTER BROKERAGE SERVICE

Harris-Crane, Inc.
221 So. Church Street
Charlotte, North Carolina
Tel.—EDison 2-6148
Teletype—CE 164

Charles J. Koelsch Grain Co., Inc.
209 Grain & Flour Exchange
Boston 9, Massachusetts
Tel.—Hancock 6-3115
Teletype—BS 587

We are linked together to give you better service in all commodities. Our nationwide coverage, with private leased wires connecting all offices, assures prompt, efficient brokerage service. Try us on your next transaction.

BROKERS IN FEED INGREDIENTS

CUT YOUR FORMULA COSTS

WITH CLINTON

C. F. S. CONCENTRATE...#3

The NEW, MORE ECONOMICAL source of unknown growth factors

Consists of corn fermentation solubles dried on corn by-products feedstuffs.

*For detailed information write*

Quality products
FROM THE WORLD'S CORN CENTER
CLINTON

CLINTON CORN PROCESSING COMPANY
CLINTON, IOWA

An exterior view of Sauder's Feed Service at Tremont, Ill. The farm supply store is in the foreground. The new push-button feed plant is in the background. On the right is the older custom mill, which will continue in operation.

# New Feed Plant in Illinois Caters to Specialized Feeders

**Feed Man Builds New Mill to Improve Custom Milling Service and Provide Larger, More Efficient Facilities for Branded Feed Manufacture**

By Al P. Nelson
Feedstuffs Special Writer

When a farmer goes into high-production feeding, he often becomes more of a specialized feeder than a farmer, and he usually buys and uses much more feed than the average customer. And when this happens, the average size custom mill may not be equipped to handle the large amounts of grinding and mixing such a feeder requires at frequent times. Also, when a mill makes its own brand of feed, a small, older mill set-up isn't adequate.

The average mill may not be able to handle orders of 5 tons and over without interfering with a large number of customers who have smaller amounts of feed to be processed. Neither the small customer nor the larger feeder may get the service he expects.

Take the case of Sauder's Feed Service, Inc., at Tremont, Ill. In recent years, Willard Sauder, owner, built his custom milling business to a fairly high volume. At the same time, he was manufacturing his own line of registered feeds, using the custom mill equipment. It was a matter of utilizing available time on the grinding and mixing equipment for Sauder feed manufacture and still

IMPORTANT NEWS FOR FEED DISTRIBUTORS

INCREASE FEED VOLUME— BUILD BULK FEED CUSTOMERS NOW

With New DRI-MASTER "on-the-farm" Steel BULK FEED TANKS

You can build bulk feed customers fast with these sturdy, weather-tight farm-tested bulk feed tanks.

Farmer feeders approve of these efficient steel tanks which save them feed costs and hours of feeding time. Sturdy steel construction throughout for many years' service on the farm.

Standard 5-T Model has 247 cu. ft. capacity and stands 15', 4" high. Take only an 8' x 8' floor space. Tank opening, 3' — 11" from floor level. Convenient roof opening for feed truck loading. DRI-MASTER Bulk Feed Tanks are rat and bird proof and the tightest built steel tanks on the market. Available in three models: 5-T, 10-T and 15-T.

- Weather-tight, one piece wrap-around sidewall. Complete tank shipped knocked-down.
- Heavy ribbed hopper panels provide added strength. Will not sag or buckle.
- High strength steel angle-iron legs extend up and reinforce sidewall. Thoroughly farm-tested.

WRITE FOR COMPLETE INFORMATION
*Dealer Inquiries Invited*
Write: AGRI-TEC Steel Corporation
Dept. F, JOHNSTOWN, OHIO

**The door to Mr. Sauder's office has a sign showing the firm's pork production and feeding schedule. Farmers see it and often go on in to talk over a feeding program.**

keeping the custom milling customers happy.

The problem was complicated by the fact that while the custom work was increasing, so was the demand for Sauder brand feeds.

**New Mill**

Mr. Sauder surveyed his entire field of operations carefully and then made a decision. He would build a new and larger mill on the premises. The older custom mill would continue to handle work up to 5 tons. The new mill would concentrate on the manufacture of the firm's branded feeds, and also would handle custom work of 5 tons and over.

Mr. Sauder said that when professional feeders in the area heard about the plans for the new mill, they showed considerable interest. One feeder who has 20 tons of feed processed each two weeks said he would be glad to give the Sauder firm the business. Others said the same.

The new plant—a push-button batch-mixing mill—was opened recently, with a special open house and gifts and prizes.

The new plant was built by Hogenson Construction Co., Minneapolis. It has a storage capacity of 500 tons of formula feed and ingredients, and it has 21,000 sq. ft. of floor space.

**Control Panel**

Batching and mixing are controlled electronically from a Hardy control panel. Feed is mixed in a 2-ton Strong-Scott horizontal mixer with double air gates for fast discharge into the surge bin.

The mixed feed is elevated to the top of the 90-ft. tower and then by controls from the work floor is directed into one of five loading bins, six holding bins or the bin which feeds the pellet mill.

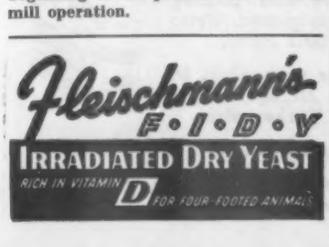
Grinding is done on a double-motor Strong-Scott hammermill with remote control screen changes.

A 5-ton-per-hour California pellet mill and crumblizer also are part of the new facilities. The pellet mill, Mr. Sauder said, has a special long mixing chamber that makes the machine adaptable for mixing liquids in feeds.

In the driveway is a 50-ton, 45-ft. scale which "weighs anything legal on the road". Also in the driveway area is a hydraulic hoist for trucks and a hay shredder to shred and blow directly to the hammermill. Five overhead loading bins allow mash, pellets or custom mixed feed to be loaded out and checkweighed on the scale.

The new plant represents a major

**An employee at work in the older, smaller custom mill, which was the beginning of the present Sauder feed mill operation.**

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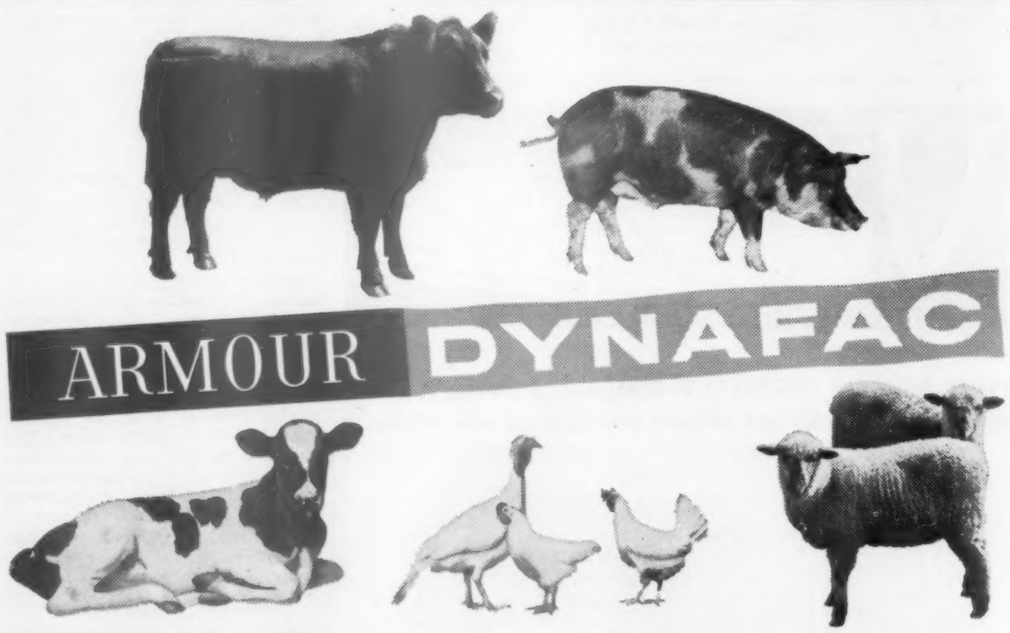



ARMOUR DYNAFAC, THE CHEMOBIOTIC ADDITIVE,

HELPS LIVESTOCK AND POULTRY MAKE BETTER USE OF FEED --

PROVIDES EXTRA HEALTH INSURANCE

BEEF CATTLE—Dynafac boosts gains by 10 to 15%. It knocks out harmful bacteria in the intestinal tract—does not disturb beneficial organisms in the rumen. Fed with or without stilbestrol, Dynafac gives improved performance, cattle look better; improved bloom with Dynafac is unmistakable and these animals stay on feed!

CALVES (beef and dairy)—Dynafac builds a healthy, husky dairy heifer with the foundation for a high-producing milker. Beef calves show the same fast response to Dynafac—heavier weaning weights and lower-cost gains.

HOGS—Dynafac promotes growth and helps control scours. Dynafac has often brought scours under control where other remedies have failed. To date, no Dynafac-resistant strains of scours-causing bacteria have been observed. In controlled tests hogs on Dynafac usually show 10 to 20% greater gain.

LAMBS—1/2 lb. daily gain or better is normal for good lambs getting Dynafac in a balanced ration. It counters stress conditions—gets lambs off to a fast start for early gains. Feedlots that have regularly had 5 to 7% death loss report mortality down to less than 1% for lambs on Dynafac.

POULTRY—(layers, broilers, turkeys)—Dynafac controls harmful bacteria in the intestinal tract without impairing beneficial organisms. Selective chemobiotic action produces a healthy digestive canal—enables a bird to get more nutrients from its feed. This means faster growth and heavy production.

NOTE: FUNGI GROWTH IN THE DIGESTIVE TRACT is common in livestock and poultry. Fungal organisms impair growth and vitality—or in severe cases kill an animal or bird. Dynafac knocks out fungi on contact by destroying its reproductive spores.

ARMOUR AND COMPANY, CHICAGO, ILLINOIS

Dynafac is distributed nationally for Armour by the Chemical Department, McKesson & Robbins, Inc. Write us for further information.

# PHOS-FEED®

BRAND

## DICALCIUM PHOSPHATE

MINERAL SUPPLEMENT FOR FEED MIXTURES

***Makes good feeds even better!***

- The feed ingredient with phosphorus (18½% and 21%) and calcium in most available form
- *Lowest* in fluorine, containing less than .004% (that's less than 40 parts per million!)
- A dependable source of supply, assured by quality-control from mine to user
- Blends well . . . stable in storage . . . dry and free-flowing . . . won't cake or clog
- Derived from 99.9% pure Elemental Phosphorus

**PHOSPHATE FEED SOLUTION**
Guaranteed Minimum Phosphorus—23.7%
Write or Phone for Information

*WRITE OR CALL CHEMICAL SALES DIVISION*

**The AMERICAN AGRICULTURAL CHEMICAL Co.**
50 Church Street, New York 7, N.Y., Telephone BArclay 7-1400



TRADE MARK REG.

# VITA-GEE

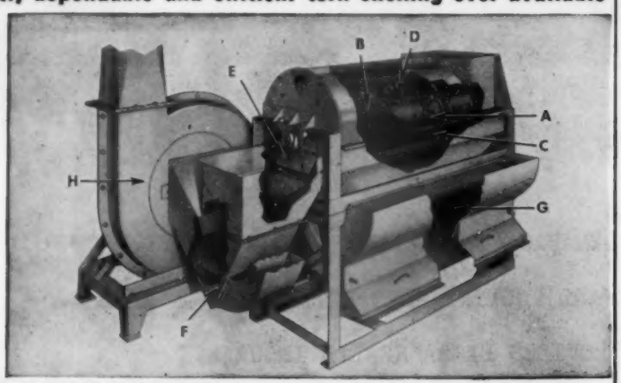
A LIVE YEAST CULTURE — for 4-footed animals and poultry. Supplies all known B Complex Vitamins including $B_{12}$ plus other nutritional factors. Easy to add to any formula.

*Write or Wire for sample and prices.*

ZELLERS' LABORATORIES READING, PA.



**EVERY FUNCTION CAREFULLY ENGINEERED to provide the most compact, dependable and efficient corn shelling ever available**




# TRIUMPH No. 1200* Corn Shellers

**with shelled corn cleaning attachment and cob blower**

***Designed Expressly for Grain and Terminal Elevators***

The unique principles developed by TRIUMPH Engineers for the TRIUMPH No. 1200 Corn Sheller have produced superior performance and high shelling rates in the high moisture corn areas of the East, and the Southern Snapped Corn Areas of the South as well as the machined picked corn areas of the Corn Belt. That these principles have produced outstanding results is demonstrated by the wide acceptance and popularity of the TRIUMPH No. 1200 Corn Shelling System by commercial corn handling plants in the very areas where corn shelling problems were the most troublesome in the past.

Along with the development of better corn shellers, TRIUMPH Engineers and Distributors have helped solve many problems relating to handling and shelling ear corn from the dump pit to the cob bin.

The valuable experience of TRIUMPH in this specialized field is a plus value gained only in buying TRIUMPH.

**Check these new patented principles of sheller design developed by TRIUMPH Engineers:**

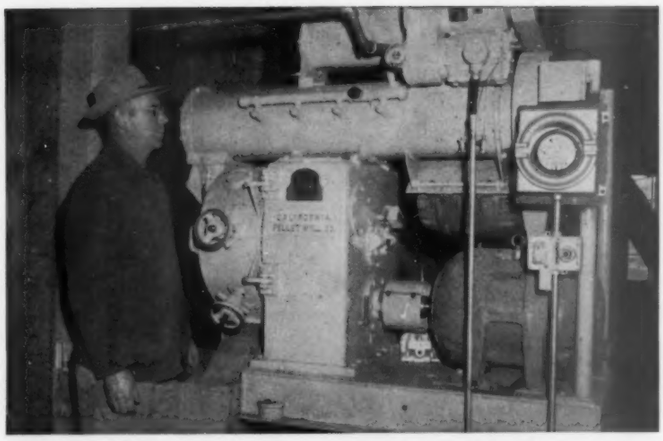
A—Rugged Shelling Cylinder—improved design—carefully engineered for maximum agitation assuring thorough shelling and separation. B—Every inch of area around the shelling cylinder is actively used to screen out shelled corn. C—Area between shelling cylinder and screen enlarged to provide high shelling rates and allow foreign material to pass. D—Curved Comb Bars control rate of flow internally to assure full separation. E—Automatic control of discharge rate. F—Pneumatic trap for foreign material. G—"Push-Pull" cleaning thoroughly controls aspiration of shelled corn. H—Separately powered, high capacity cob blower with flexible positioning engineered into the shelling system.

*Pat No. 2,754,827 Other Pats. Pending

# TRIUMPH
## CORN SHELLERS

**THE C. O. BARTLETT & SNOW CO.**
6249 HARVARD AVENUE • CLEVELAND 5, OHIO

**GET FULL DETAILS.** *Write for the catalog today.*

**Willard Sauder, owner, looks over a new California pellet mill as it is about to be installed in his new feed plant. The pellet mill, he noted, has a special long mixing chamber which makes it adaptable for mixing liquids in feeds.**

step forward from the firm's start in 1935 in a converted garage. Mr. Sauder started making feed on a farm south of Tremont. In 1945, he moved to Tremont and erected a concrete block building. A portable mill was then used. In 1950, the first stationary mill building was erected. This provided the firm with its first bulk feed service.

### Large Amount Pelleted

Mr. Sauder said that his feed business is about half pellets now. He noted that a large share of the feed goes out in bulk.

Sauder sacked feeds are sold through the Tremont office under the name ManAmar, using ManAmar supplements.

Mr. Sauder said that before the new mill was opened, he already had assurances of additional business, including some of a volume he had not been able to handle before.

He said the new mill, with its custom service, is well equipped to handle the business of larger feeders who have their own special formulas.

In branded feed manufacture, Mr. Sauder makes 24 registered dairy, poultry and hog feeds.

### Hopes to Double Volume

The new mill cost $225,000. Mr. Sauder expects to do twice the dollar volume in the new mill that he did in the old one. He also expects to enlarge the territory covered, especially in the sale of his own registered brand feeds.

He has one outside salesman who is also a trouble shooter on almost any farm feeding problem. This man maintains contacts with farmers, so that Mr. Sauder knows exactly how all his customers are faring. Extra sales also result from such contact work and customers know that here is a feed man who is working closely with them to help them make maximum profit from their use of his feeds. This type of cooperation, reports Mr. Sauder, is highly important in winning and holding customers in this competitive area.

The small custom mill processes about 225 tons per month. There are two men employed in this mixing department, one of whom does other work when needed.

Grinding and mixing prices are 15¢ cwt. which covers both operations. Mr. Sauder states that the small custom mill breaks about even, without the sale of concentrates and other materials. In a competitive area he thinks this is a good record. In his estimates he does not figure the costs of making his own feed.

Mr. Sauder has three bulk trucks. Many of the farmers get their feed in bulk. Either it is delivered by the mill, or the farmers have the feed dumped into their own trucks. Many feeders bring in their grain, leave it at the mill to be processed. The mill then delivers the finished feed back to the feeder and puts it where he


# *Larger Profits for Dealers And Growers With Hard, Sparkling*

SUPREME RI-STONE SHARP-INSOLUBLE

## GRANITE GRIT

**The demand for Sparkling Ri-Stone Granite Grit is growing by leaps and bounds. Sales are more than double that of last year. Poultry Raisers find Ri-Stone's harder, sharper grinding edges enable them to get faster growth and more and larger eggs at lower costs. Every month more raisers are learning about Ri-Stone through its regular advertising in poultry publications reaching approximately a million operators per month.**

**Yes, Ri-Stone means added profits to both feed dealers and poultry raisers. Your inquiry is invited. Write for copy of Poultry Grit Facts.**

**Get Ri-Stone in the economical 80 lb. bags. A size for all ages. Fine, Medium, Coarse and Turkey sizes.**

Fine Aggregate Division

**RION CRUSH STONE CORP., Rion, S. C.**

QUARRIERS OF GRANITE FOR OVER 70 YEARS.

# "Who, me? Tomorrow's hope?"

We'll admit that's a pretty lofty title, young lady. But what we mean is that you and the thousands of other farm girls are mighty important to this country's future.

Whereas your farm background will serve you well in whatever lot you pursue, let's look at your future on the farm.

From our point of view, it looks like a mighty good future. There are lots of reasons why.

You see, with the population growing so fast, cities starting to burst at their seams—people will be needing more and more things from the farm. And that puts farm folks in a key position.

Why do we feel you're so important? You'll be tomorrow's farm homemaker. You'll have the job of providing your home with warmth and love and happiness. We couldn't very well do without you.

How will *living* on the farm be? Ask your mother how much things have improved on the farm just since you were a baby. Then look at all the progress that's already been made in making a housewife's life on the farm more pleasant. Why, right now you can have all the conveniences that any housewife has—even those living in the largest cities. And in years to come, living should be even more comfortable.

The way this world's population is booming, before the turn of the century there'll be 136 people to feed and clothe for every 100 today. That's a whale of an increase. And it means a tremendous challenge to the ability and skill of our farm families.

But as we said earlier, young lady, without you and your influence, the future in farming wouldn't be nearly so bright.

Did we say you're "tomorrow's hope?"

We sure did. And we think the title fits you like a crown.

Wear it proudly.

* * * * * * * *

Yes, we at Cargill are convinced that this pretty young lady *is* tomorrow's hope, and we're all counting heavily on her.

We've seen a lot of farm girls grow up in our 93 years as Creative Processors of farm products, and we know the fine kind of women they are.

We know, too, that today's farm girl will fulfill her destiny in the same quiet, magnificent way her mother has . . . with the stamina of a pioneer, the devotion of a saint, and a precious gift of love and understanding that defies description.

Yes, tomorrow looks bright for this young princess and her crown.

And largely *because* of her, we at Cargill feel our future is bright, too. Through Creative Processing, our aim is to change an ever-increasing number of raw farm crops into finished products people will need and buy.

Cargill
CREATIVE PROCESSING

93 Years of Creative Processing of Farm Products

CARGILL

wants it. The drivers of the bulk trucks also do some selling on their calls. Mr. Sauder is now buying his ingredients in carload lots, which gives him another saving.

"With the two mill set-ups, we are able to take care of the feed needs of small and average customers as well as the needs of specialized feeders who buy in large quantities," states Mr. Sauder. "There is a lot of feeding of hay in feeds in this area, and so we expect to do a lot of pelleting of hay with our California pellet mill. On it we have a 30 h.p. boiler."

**Advertising**

Mr. Sauder is definitely advertising minded. He states that he spends slightly over 1% for advertising, mostly in newspapers and direct mail. He issues a monthly mimeographed bulletin, entitled "Sauder's Farm Chatter." It is produced on his own mimeograph and is mailed to approximately 500 farmers in the area.

Mr. Sauder holds his own advertising to a minimum in the bulletin. He concentrates instead on giving farmers facts about feeding. He gets these from agricultural college releases, trade publications, etc.

The copy which he uses is brief and to the point. There is quite a bit of space between items which makes for easier reading. Farmers like the bulletin and tell him so. This encourages Mr. Sauder to keep issuing it and printing items which help farmers with their feeding problems.

This dealer also has a Polaroid camera which he carries with him on his field trips. Frequently he will take a picture of a farmer and his family, or of a prize cow or hog, etc., and gives the pleased farmer the picture before leaving the premises. Sometimes, too, he'll snap a picture of a farmer at the mill and give him the picture.

"I find that a camera like this is an excellent investment toward building good will," states Mr. Sauder. "It helps make you more welcome on farms."

For the past few years Mr. Sauder has been leaning toward specialized feeder meetings. For example, he will have 40 to 50 dairy feeders to a dinner meeting, and all the discussion will center on dairy feeding. At other times he will have meetings for hog feeders, poultrymen, etc. He thinks a more thorough job of feeder education can be done in this manner.

Now that his new mill is in operation, Mr. Sauder plans to have additional meetings of this type.

On the door to his office, Mr. Sauder has a sign which advertises his pork production schedule.

This step-by-step description of the hog feeding program appeals to farmers and many of them step into Mr. Sauder's office for more details. In this way, more feed is sold and more farmers placed on a profitable hog management program.

Alert to every merchandising opportunity around a feed mill, Mr. Sauder also has a farm supply store. In this store he stocks feed, seed, fertilizer and other items, along with poultry and hog equipment. As farmers stand around in the office talking crops, feeding or paying bills, they see some of these items and "impulse sales" are often made.

"With our new plant added to the custom mill and the farm supply store, we feel we have a base for larger and more profitable feed operations," said Mr. Sauder. "We are keyed to the feeding needs of our particular trade area, and that puts us in an excellent situation, I think."

## *K-State College Club Honors John Vanier*

MANHATTAN, KANSAS—John J. Vanier, Salina, well-known Kansas miller, was honored May 3 by the Kansas State College Block and Bridle Club as one of Kansas "foremost agricultural leaders."

A portrait of Mr. Vanier will be hung in the gallery of the Block and Bridle Club, along with portraits of others honored since the recognition program was started in 1932.

Mr. Vanier has taken a special interest in Kansas State College and has been active in organizing industry assistance both to the flour milling school and the more recently established feed tech program. He has served on industry advisory committees in both instances.

Mr. Vanier has extensive interests, not only in flour and feed manufacture, but also the processing of several other agricultural products. He is a large producer of livestock, particularly Hereford cattle.

Born on a farm in Pawnee County, Neb., Mr. Vanier got his start in the flour milling business in the office of the Abilene (Kansas) Flour Mills Co. in 1917, after a brief apprenticeship with a grain commission firm in Kansas City. He became sales manager of the Abilene plant and, in 1925, with some associates, purchased the Western Star Mill Co., Salina. Later he acquired ownership of other flour milling properties, including Weber Flour Mills Co., Salina; Gooch Mill & Elevator Co., Lincoln, Neb., and Inland Mills, Des Moines, Iowa. Mr. Vanier's interest also grew in the grain handling field and his Salina Terminal Elevator Co. now operates storage facilities at five major grain centers, and has other storage facilities elsewhere. In the feed industry Mr. Vanier's interest grew from the Gooch Feed Mills, which operates three formula feed mills, to include several alfalfa dehydrating plants, soybean processing plants and a recently established molasses feed firm.

## Grain Inspection

SACRAMENTO, CAL. — A new grain inspection office opened May 1 at Corcoran, Cal. Harry Spires, chief of the state Bureau of Field Crops, announced that the bureau has leased facilities for the inspection office at the Salyer Grain & Milling Co. Car and truck inspections are made there on request, and submitted samples are also checked. Jim Fujii is the inspector-in-charge at the station.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Because of its low fibre content, in combination with high protein, Hi-Energy Soybean Oil Meal is an ideal protein source for new high-energy mixes and special feeding formulas. Precise cooking methods bring the protein content of this soybean oil meal to the desired high level of strength.

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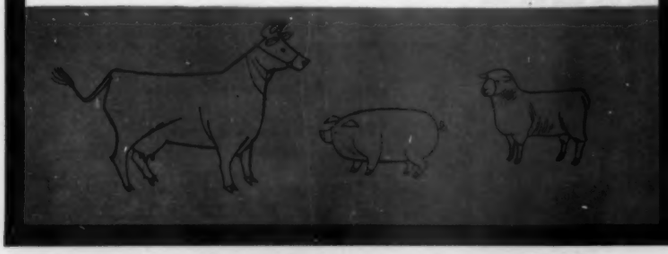

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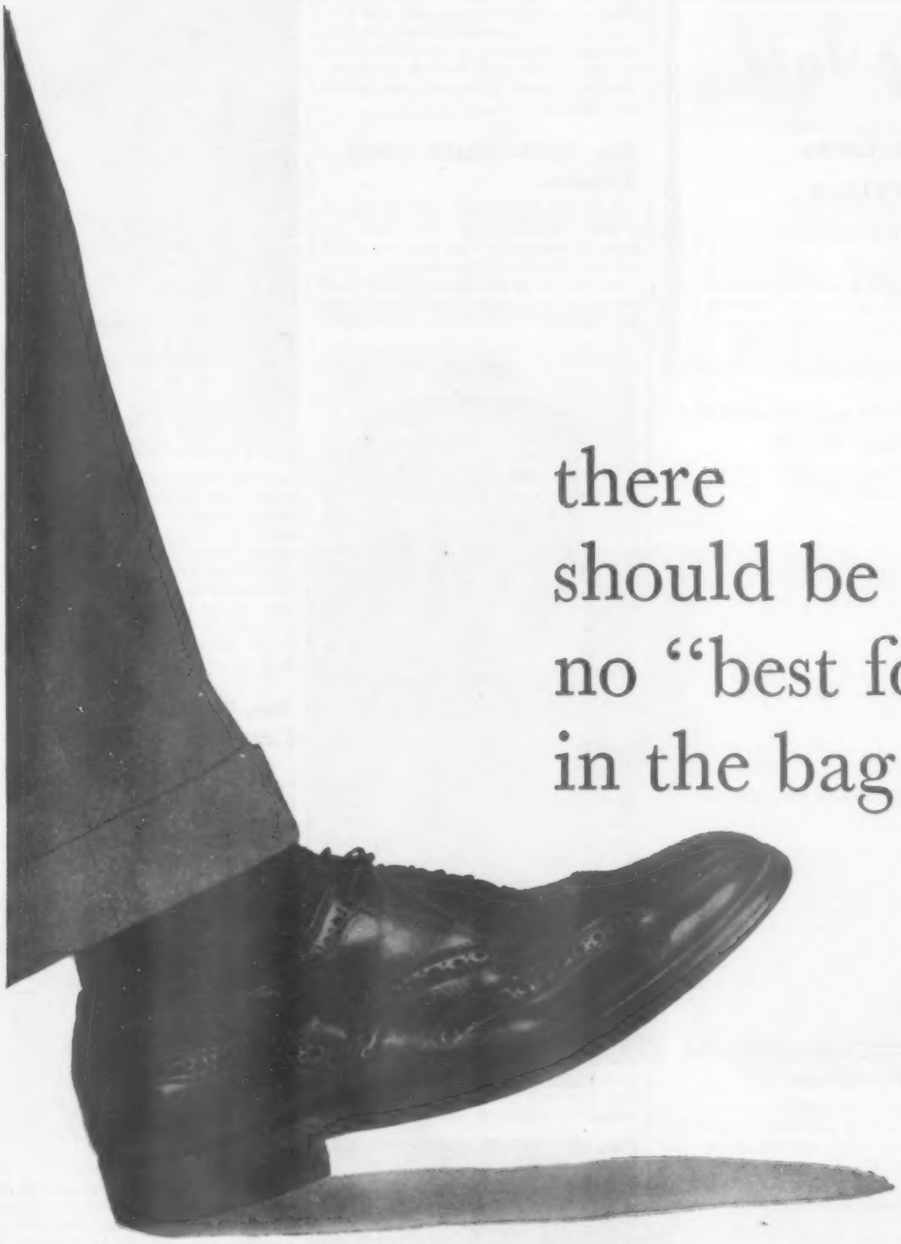


# there should be no "best foot" in the bag business

Putting the best foot forward may be good selling strategy, but the smart *buyer of bags* looks farther.

He knows, for example, that new "features" can be hamstrung or stymied by lack of interest or lax follow through

... that sharp, clear printing accomplishes nothing if bags aren't delivered on schedule.

... that utmost care in skilled manufacture means little if a different bag would do the job better.

When it comes to "best feet," you could call Chase a centepede, for good bags, Chase-designed to *your* needs—*properly made, promptly shipped*—reflect the competence of hundreds of specialists who constitute the progressive Chase family.

Chase makes bags of all kinds—multi-wall paper, textile, Saxolin open-mesh, Polytex film, laminated, waterproof ... consumer-size bags and larger.

**Bag Plants and Sales Offices Coast to Coast**
**—a nation wide staff of bag specialists**

***Our 111th Year***

**CHASE**
**BAG COMPANY**
**155 East 44th Street, New York 17, N. Y.**

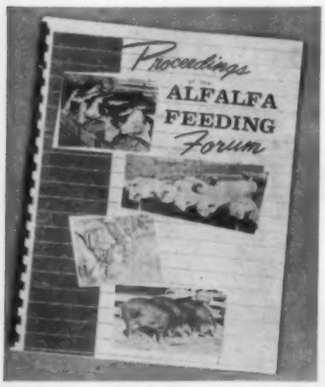
# Worth Looking Into

**New Products**
**New Services**
**New Literature**

This reader service department announces the development of new and improved products, new services and new literature offered by manufacturers and suppliers. Claims made in this department are those of the firm concerned. Use the accompanying coupon to obtain the desired information.

## No. 7034—Alfalfa Forum Proceedings

The printed proceedings of the Alfalfa Feeding Forum, held as part of the American Dehydrators Assn. convention in Colorado Springs, are being distributed by ADA. The colorful booklet contains all the talks on the




latest experimental work and practical feeding of beef cattle, sheep, swine and dairy cattle. Speaking on the forum were outstanding nutritionists from academic institutions and the feed industry, as well as livestock feeders. To receive a copy of this new booklet, check No. 7034 on the coupon and return it to Feedstuffs.

## No. 7032—Automatic Bagging Scale

The Richardson Scale Co. has announced the availability of a new 6-page, two-color bulletin describing and illustrating its E-50 automatic bagging scale. With four photographs and six cut-away line drawings, the new bulletin, 3749B, details the E-50's design, capacities, gravity or power feed operation, and discharge. Its high-speed accurate net weighing of almost all materials packaged in open-mouth paper or textile bags is also described. Secure details by checking No. 7032 on the coupon and mailing it to this publication. Please print or type name and address.

## No. 7023—Aeration System

The Douglas Chemical Co. is now marketing its new "Douglas Aeration System," designed for the feed, grain and seed industry. Every component in the system is specially engineered to meet individual storage conditions, company officials state. Check No. 7023 on the coupon and mail it to secure details.

## No. 7027—Antibiotic Salt Product

A salt and antibiotic mix said to promote growth and increase feed efficiency has been introduced by the Leslie Salt Co. The product, worked out in collaboration with the Chas. Pfizer Co. Laboratories, contains Pfizer's brand of oxytetracycline hydrochloride, Terramycin. Check No. 7027 on the coupon and mail it to secure details. Please print or type name and address.

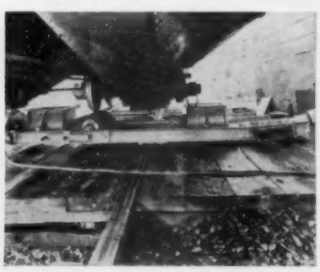
## No. 7033—Bulk Feed Tanks

Agri-Tec Steel Corp. has developed a new all-steel bulk feed tank for farm installation. The weather-tight galvanized sidewall is one-piece construction with one seam. Tanks are of galvanized steel construction and are claimed to be rat and bird-proof.

There is no feed loss, company officials say. Another new feature is that the steel angle iron legs extend up and attach to the tank to carry the weight load. The opening is in the roof. Tanks come knocked down in 5-, 10- and 15-ton capacities. Check No. 7033 on the coupon and mail it to secure details.

## No. 7031—Feed Unloader

A portable transfer unit with a new dual feeder device empties "Airslide" cars in half the time of a single-feeder unit, according to an announcement by the Fuller Co. The dual feeder has two airlocks, each of which is situated directly beneath



outlets in the car. This new feature eliminates need for the centrally-positioned "Airslide" brand of fluidizing conveyor which formerly delivered material to a single airlock from both outlets. Check No. 7031 on the coupon and mail it to secure details. Please print or type name and address.

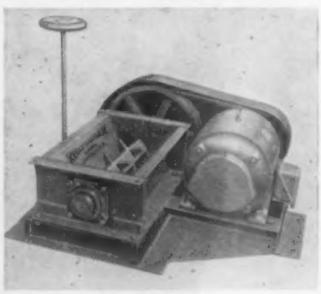
## No. 7026—Truck Dock Shelter

Frommelt Industries announces the development of a new truck dock shelter that provides protection in

any weather. Called the "Snug-Fit" design, this shelter has a spring-tensioned upper frame carrying the top cover, a weighted front curtain, and sliding front curtains — forming a Cape Hood fitted with sewn-in rubber cord and weights to hold automatically and snugly around top and sides of a truck. Several sizes are available. Check No. 7026 on the coupon and mail it to secure details.

## No. 7029—Corn Crusher, Regulator

The Duplex Mill & Manufacturing Co. states that its new "Kelly-Duplex finger-type corn crusher and feed regulator uniformly reduces corn, cobs, and husks and provides a steady, even flow into a hammer mill, attri-



tion mill or corn sheller at any rate required. Small grain can be fed through with the ear corn or the machine can be used to regulate the feeding of small grain alone." Check No. 7029 on the coupon and mail it to secure details.

## No. 7025—Poultry Equipment Folder

A new folder describing the Oakes Manufacturing Company's automatic poultry equipment has been printed. The three main types of equipment described are the automatic feeder, automatic waterer with new solenoid valve and automatic egg gatherer. Check No. 7025 on the coupon and mail it to secure details. Please print or type name and address.

## No. 7028—Molasses Mixer

J. B. Sedberry, Inc., introduces a new "package unit" for molasses blending in its "Jay Bee Puritan No.

**Send me information on the items marked:**

| | | |
|---|---|---|
| ☐ No. 7023 | ☐ No. 7028 | ☐ No. 7033 |
| ☐ No. 7024 | ☐ No. 7029 | ☐ No. 7034 |
| ☐ No. 7025 | ☐ No. 7030 | ☐ No. 7035 |
| ☐ No. 7026 | ☐ No. 7031 | |
| ☐ No. 7027 | ☐ No. 7032 | |

(PLEASE PRINT OR TYPE)

Others (list numbers) .....

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COMPANY .....

ADDRESS .....

CLIP OUT—FOLD OVER ON THIS LINE—FASTEN (STAPLE, TAPE, GLUE)—MAIL

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GRAIN SOYA BEANS FLAX
Founded 1852
MINNEAPOLIS PV DULUTH

4 Standard." The mixer unit is powered by a 10 h.p. direct-connected motor and fed by a 7 by 20-in., 1½ h.p. auger conveyor. Operating at 1,200 r.p.m., the unit will produce from 6,000 to 12,500 lb. per hour, it is claimed. Over-all width is 35 in., length 76½ in., height 76 in. The height to discharge of mixed feed is 37 in. Check No. 7028 on the coupon and mail it to Feedstuffs to secure details.

## No. 7035—Fat Addition System

Sprout, Waldron & Co., Inc., states in an announcement that "as a result of extensive laboratory research and field tests, an economical accurately-controlled fat addition system for pellets has been developed. The system is designed to provide even distribution and adequate retention time for handling an incoming stream of pellets at rates from 8,600 to 60,000 lb. per hour." Included in the system are controlled feeding and weighing, spray coating of existing hard pellets with accurately metered fat, special units for uniform blending and a series of visual and recording indicators. It is designed for adding up to 10% fat to existing pellets. Further details are available on request. Check No. 7035 on the coupon and mail it to Feedstuffs.

## No. 7030—Screw Conveyor

The development of a screw conveyor designed specifically for feeding hay, ear corn or oats uniformly and evenly to hammer mills, has been announced by Sprout, Waldron & Co., Inc. The 14-in. diameter hay conveyor has no intermediate hangers to retard the flow of material, and is designed with a special baffle which prevents the hay from winding around the screw, it is claimed. A compact variable speed drive permits the unit to handle a variety of materials to be ground in the hammer mill through various screen sizes. Lengths from 12 to 24 ft. are available. Check No. 7030 on the coupon and mail it to Feedstuffs. Please print name and address.

## No. 7024—Corn Sheller Attachment

Barnard & Leas Manufacturing Co., Inc., announces the availability of a new corn sheller attachment for use with the "B & L Mobile Formula Feed Blender Unit." The attachment is designed for commercial work and will shell through 10 tons of ear corn per hour. Modifications have been made so that the single standard


If you're a Feed and Mineral manufacturer in the states

See Page 57



Blatchford's
ESTABLISHED IN 1900

CALF-PAB WITH DYNAFAC ESTABLISHED IN 1900

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CUSTOMERS TRUST...AT A

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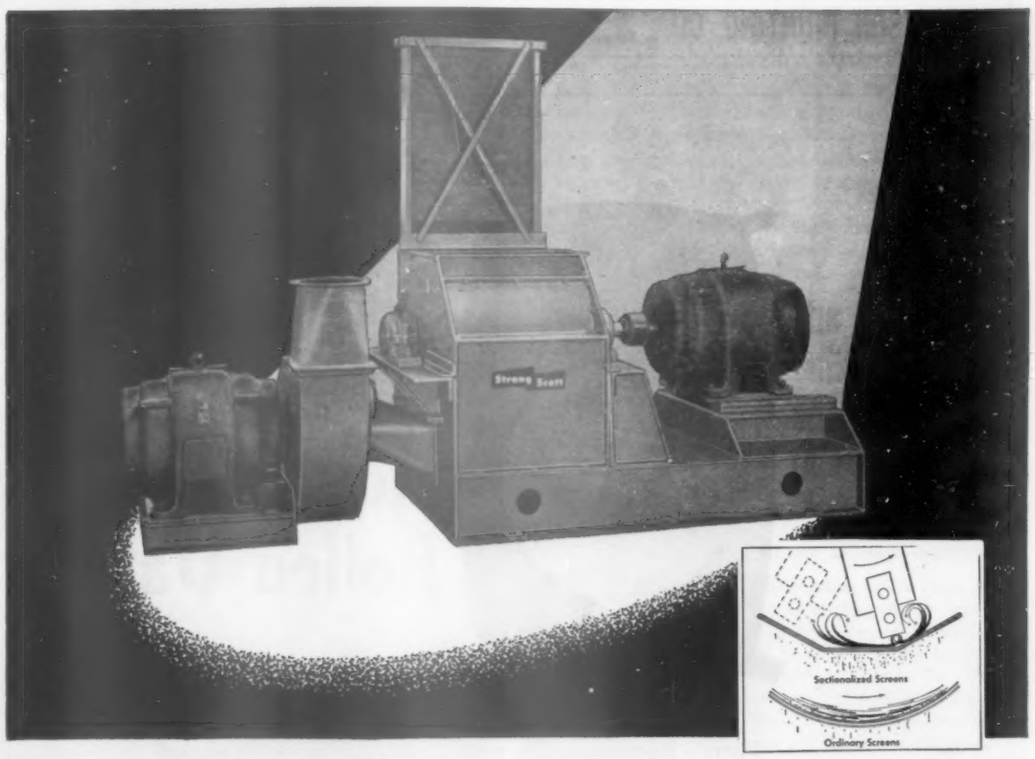



Strong-Scott presents a new idea in Hammermill operation

**Sectionalized screens offer higher capacities through "Vortex Grinding Action"**

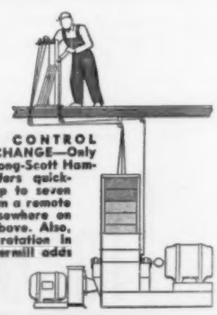
The exclusive sectionalized screens in the new Strong-Scott Hammermill assure increased grinding capacities through "vortex grinding action" (see photo upper right).

**Specially hardened screens . . .**

Because the screens are flat, they can be subjected to a special hardening process and are guaranteed to wear 10 times longer than ordinary curved screens. This drastically reduces your production costs. The special hardening means the perforations retain their sharper edges and original size longer. This produces a more uniform, quality controlled product at a greater capacity for the entire life of the screens.

For your convenience, Strong-Scott maintains a "Production Testing Service," complete with their full line of Grinding, Mixing and Separating equipment. Write to Strong-Scott for full details of this no-cost service.

**WITH VORTEX GRINDING,** material cannot roll along the surface as on ordinary curved screens. Instead, the shallow valleys made by the joining of the screen sections bounce the material back into the grinding area. This produces an air attrition grinding of particle on particle, in addition to the impact grinding on the hammers, resulting in higher tonages per hour.



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## *Also Available*

The following new products have been described in previous issues of Feedstuffs and information about them may still be obtained by jotting the appropriate number on the coupon and forwarding it to Feedstuffs.

**No. 5990**—Telescoping boxcar and truck loading conveyor, Power-Curve Conveyor Co.

**No. 5991**—Air-supported structure, CID Air Structures Co.

**No. 5992**—Catalog of dial scales, Howe Scale Co.

**No. 5993**—All-weather salt, International Salt Co.

**No. 5994** — Dual-purpose hopper, Richardson Scale Co.

**No. 5995**—Grain aeration system, Dunbar Kapple.

**No. 5996**—Bulk-type self-feeder for hogs, James Manufacturing Co.

**No. 5997** — Laboratory mixers, Sprout, Waldron & Co., Inc.

**No. 5998**—Animal health "wheel" for selecting health precautions for livestock and poultry, Chas. Pfizer & Co., Inc.

**No. 5999**—Truck body conversion, Simonsen Manufacturing Co.

**No. 6000**—Bulk feed body brochure, Baughman Manufacturing Co.

**No. 6001** — Newly-designed chick feeder, Honeggers' & Co.

**No. 6002**—Folder on laying hen, Pillsbury Mills, Inc.

**No. 6003**—Coccidiostat-growth additive, Dr. Salsbury's Laboratories.

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**No. 6005**—Fork lift truck, Towmotor Corp.

**No. 6010**—Screw elevator, Fort Worth Steel & Machinery Co.

**No. 6012**—Saccharin in pig feeds, Monsanto Chemical Co.

**No. 6014**—Truck hoist, Triumph Division, C. O. Bartlett & Snow Co.

**No. 6018** — Antioxidant bulletin, Hercules Powder Co.

**No. 6019**—Cob crusher, the Andersons.

**No. 6020**—Coccidiostat, Merck & Co., Inc.

**No. 6021**—Feed and grain blower, Truck Grain Blower Co.

**No. 6022** — Hammermill bulletin, Bryant Engineering Co.

**No. 6023** — Punch card reader, Richardson Scale Co.

**No. 6024**—"Colony cage" plan for small laying flocks, Oakes Manufacturing Co.

**No. 6025**—Feed ingredients catalog, Merck & Co., Inc.

**No. 6027**—Pneumatic bulk feed trailer, Forster Manufacturing Co.

**No. 6028**—Feed processing publication, Sprout, Waldron & Co., Inc.

**No. 6029**—Grain aeration manual, Rolfes Grain Aeration Companies.

**No. 6030**—Premix program, Peter Hand Foundation.

**No. 6031**—"Snap-in" grease seal, Landers Mill Manufacturing Co.

**No. 6032** — Hammermill bulletin, Seco, Inc.

**No. 6034** — Drop-bottom mixer, Hayes & Stolz Industrial Manufacturing Co.

**No. 6043**—Air elevator for moving pellets, Clute Corp.

**No. 7014**—Bulk feed unit, Seco, Inc.

**No. 7018**—"Airslide fluidizing" conveyor, Fuller Co.

**No. 7019**—Sewing line guide for open-mouth multiwall bags, Union Bag-Camp Paper Corp.

**No. 7020**—Pneumatic unloader system, Daffin Manufacturing Co.

**No. 7021**—Island refrigerated egg merchandiser, Tobias Enterprises.

**No. 7022**—Grain storage booklet, Hot Spot Detector, Inc.

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Lilly **REPORT TO THE FEED INDUSTRY**

# They found it pays to give 'Stilbosol' a full-time job

The mass of evidence from college experiment stations, and in the feedlots of record-keeping cattle feeders, proves that 'Stilbosol'-fortified supplements pay off best when *fed every day throughout the fattening period.* Any interruption, whether during the beginning, middle, or closing weeks of feeding, merely slows rate of gain and raises the cost of gain. If 'Stilbosol' isn't in the ration, it doesn't work for you.

**College tests summarized.** Dr. Wise Burroughs, of Iowa State College, summed up six experiments to compare gains made in the first and second halves of the diethylstilbestrol feeding period. Extra gains due to 'Stilbosol' during the first half averaged 14.66%. During the second half, gains were stimulated 14.0%. The difference was only two-thirds of one percent. This shows that 'Stilbosol' works for you every day.

**Feeder watches gains drop without 'Stilbosol.'** Ed Hibbs of Fonda, Iowa, put 58 head of steers on 'Stilbosol'-fortified rations. They were gaining over 3 pounds per day when Ed decided to omit 'Stilbosol.' "Daily gain dropped to a little under 2 pounds," Ed relates. "This was my proof of the value of 'Stilbosol' in the ration."

**Commercial feeder jumps gains 36.8% in middle of feeding period.** Don Brink of Rolling Fork, Mississippi, fed 2,000 steers on his regular rations for 60 days. Average daily gain was 1.9 lbs. Then he put them on 'Stilbosol'-fortified supplement. When he weighed two months later, daily gain had jumped to 2.6 pounds . . . up 36.8%. It pays to feed 'Stilbosol' all the way, right up to the last 48 hours.

**Feeds 'Stilbosol' for 260 days . . . steers sell for prime prices.** When Ed Kaszinski of Bryant, Iowa, sent his 1,220-lb. steers to market, his cattle looked *prime*, sold for *prime* prices, and graded *prime* in the cooler. "'Stilbosol' puts beef on my cattle faster and helps me to get more for my grain. I get an extra half-pound of gain," says Kaszinski.

'Stilbosol' is Eli Lilly and Company's trademark for Diethylstilbestrol Premix which is manufactured and sold under exclusive license granted by Iowa State College Research Foundation, Inc., under its U. S. Patent No. 2751303.

**Stilbosol**

(Diethylstilbestrol Premix, Lilly)

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**"Our BROWER MIXER paid for itself in 6 months..."**

Says F. H. Birden
Albuquerque Feed Store
Albuquerque, New Mexico

"We have used your 2,000 lb. mixer for over 10 years and it is still in excellent operating condition. Our Brower Mixer paid for itself in the first 6 months and helped bring in many new customers. We have found the Brower Mixer to be fast, dependable and thorough. We are well pleased with its performance and recommend it to anybody who is contemplating buying a mixer."

**BROWER** *Whirlwind* **MIXER**

Dependability, fast mixing action, and low cost operation make Brower the WORLD'S LARGEST SELLING MIXER! Brower action WHIRLS the ingredients instead of just stirring or tumbling them . . . produces the most thorough mix you can get. Every sack has the same even mixture.

FAST and ECONOMICAL—a perfect blend in about 10 minutes at a power cost of only 3¢ to 5¢ a ton. Five sizes —700, 1200, 2000, 3000 and 4000 pounds-per-batch mixing capacities. Above-floor and below-floor models. Heavy welded steel construction—built for years of trouble-free service.

Interior readily accessible through large hinged service door and hinged conveyor sleeve.

Notice the mixing paddle at top which WHIRLS the ingredients for the most thorough mix.

Glass observation window at eye level provides easy inspection of mixed feed at any time.

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***World's Largest Selling Mixer***

**FIRST COMMERCIAL USER—Honeggers' & Co., Inc., Fairbury, Ill., is the first commercial user in the U.S. to own Piper's new Commanche airplane shown in the background. At left, Louis Dyson, operator of the Illini Airport at Champaign, Ill., hands the keys for the new aircraft to Elmer S. Roth, Honegger vice president and general manager. Striped in red and white, this is the fourth Piper aircraft in the Honegger fleet, which also includes a twin-engine Apache and two Tri-Pacers. (Champaign-Urbana Courier Photo)**

## Film on Small Business Management Released

NEW YORK—A film prepared for the guidance of small business management called "Small Business U.S.A.—The Story of Main Street," has been released for general distribution by Dun & Bradstreet, Inc., New York.

The material in the film is based on actual case histories taken from the credit files of the company. It presents different situations encountered in small business, illustrating problems that are faced, how the problems are surmounted and, if not, why they are not.

The 30-minute black and white film is available for general distribution to interested educational, business, religious and social organizations at a rental fee of $2.75. Distribution rights belong to Ideal Pictures, Inc., 58 E. South Water St., Chicago 1, Ill.

**Nature's own formula means better livestock** ***more profits for you***

Only natural protein and feeding fat have important, unisolated growth factors—nature's own formula—so essential to the development of profitable livestock. That's why Wilson Red W Brand protein concentrates and Vitagen Feeding Fat enable you to produce high energy feeds for livestock and poultry that bring repeat business year after year—business based on meat on the hoof—money in the bank!

**Animal Protein Concentrates and Vitagen Feeding Fat**
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|---|---|
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| RED W BRAND | 60% Digester Tankage |
| RED W BRAND | Special Prepared Bone Meal (70% Bone Phosphate of Lime —Minimum) |
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# Turkeyland USA reports on Whitmoyer CARB-O-SEP

Patent Pending

## NO BLACKHEAD OUTBREAKS ON CARB-O-SEP

Not one case of blackhead with CARB-O-SEP fed birds, although blackhead was prevalent through his entire area reported a mid-western serviceman.

## CHAMPIONS CARB-O-SEP FED

CARB-O-SEP fed birds dominated the championships at the Michigan Turkey Festival. Five Grand Champion birds and the Largest Bird at the Show were CARB-O-SEP fed.

## FEED MANUFACTURER TESTS CARB-O-SEP AGAINST ANOTHER LEADING PREVENTIVE

No outbreaks on CARB-O-SEP . . . three outbreaks in other group. CARB-O-SEP birds were in better shape at marketing . . . feed conversion was better.

## PENNSYLVANIA GROWER ENDS RANGE BLACKHEAD PROBLEM

Blackhead outbreaks were an annual problem. Last year he tried CARB-O-SEP and raised top quality birds—with no blackhead losses.

## BREEDER AND GROWER PUTS ALL HIS TURKEYS ON CARB-O-SEP

5,000 breeders and later in the season 30,000 meat birds put on CARB-O-SEP. Fertility and hatchability good .

## PROMINENT EASTERN GROWER CLEARS UP BLACKHEAD

This grower, with a flock of 40,000 Broad Breasted Bronze Turkeys, found CARB-O-SEP cleared up blackhead and prevented any further losses. The birds were marketed with a good finish.

## CARB-O-SEP FED BIRDS WIN AT NATIONAL TURKEY CONVENTION

CARB-O-SEP fed entries were among the important prize-winners at the National Turkey Convention at St. Louis.

**CARB-O-SEP was developed by WHITMOYER research,**
***It is the safe, potent way to get healthy, blackhead-free growth.***

## MIX CARB-O-SEP IN YOUR TURKEY MASH

Give your turkey mash the best opportunity to furnish the full measure of fast, healthy growth that you so carefully put into it.

**IT'S PROFITABLE FOR BOTH YOU ...AND THE GROWER**

For complete information and scientific data on CARB-O-SEP write Box FS-5

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**PILLSBURY SALES WINNERS—The feed division of Pillsbury Mills, Inc., has named salesmen from its Nashville, Tenn., plant as sales area winners of the firm's Golden Flock Award. The award is made each year to the Pillsbury sales team which produces the greatest increase in poultry feed sales. Each winner received a cash bonus and a gold egg trophy at the awards banquet in Atlanta, Ga. Standing, left to right, are Fred Long; Elton Chapman; C. S. Bell, sales manager; Dave Martin, manager of Pillsbury's poultry department; J. K. Hubbard, director of marketing; Eddie Harper; Bob Bruce; Bill Byram; R. W. Siebrasse, market planning manager; Bill Lachicotte, and Jim Ayers. Seated are Ben Williams, plant sales manager and sales manager in the Nashville area; Graham Warren; Harmon Caver; Warren Thompson; Don Crawford and Cecil Hayes.**

## Dates for Louisiana Poultry Meeting Set

NEW ORLEANS — New arrangements have been made for the convenience of poultry industry members who wish to take part in the annual convention of the Louisiana Poultry Improvement Assn. Sept. 7-9 at the Jung Hotel in New Orleans, says Clyde Ingram, executive secretary of the association.

No booths will be set up at the convention, but commercial concerns taking part will be provided with individual table space, properly labeled in the meeting hall, which will afford a better opportunity to meet prospective customers and to display catalogs, circulars, and other material. This plan was adopted by the Louisiana Poultry Improvement Assn. after consultation with a number of exhibitors who have been active at previous conventions, Mr. Ingram said.

The association executive secretary adds that there will be no registration fee and that all persons interested in poultry production and the welfare of the poultry industry are invited to attend. Commercial concerns interested in taking part should write to Clyde Ingram, executive secretary, Louisiana Poultry Improvement Assn., Knapp Hall, University Station, Baton Rouge, La. The names of participating concerns will be carried in the convention program, also.

An outstanding convention program is being planned, Mr. Ingram added. The Jung Hotel has ample modern convention facilities, he said.


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**Primary Fermentation Products**

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*Riboflavin — Vitamin B-12 — Bacitracin — GP-101, source of whey and other unidentified growth factors.*

# Modern Concepts of Feed Advertising

**To whom will we be selling feed in the future? How effective will advertising be in getting the job done? At whom should advertising be beamed? What type of advertising will motivate the new type of feeder? Here's a discussion of these and other questions faced in planning and carrying out feed advertising programs in an era of agricultural change.**

**By Frank P. Berry**
**Nutrena Mills, Inc.**

Frank P. Berry

There are many areas of feed advertising that we could explore in this discussion. We could consider the relative values of radio, television and farm papers. Or we could discuss ways of motivating dealers. Or how about the advantages of right hand pages versus left, or full color against black and white ads? How about outdoor, direct mail, incentive programs?

But these are only the "how" of advertising, though extremely important in their place. A more basic question today is: "To whom are we going to be selling feed, and how much help is advertising going to be in getting the job done?"

**Fundamental Questions:** I'd like first to pose two fundamental questions:

1. Who is our customer?
2. How do we motivate him?

The question of who our customer is, and who he will be two, five or ten years from now, must be answered—and it must be answered right. Advertising men must know to whom they are talking and why, or they could easily wind up doing a lot of wheel spinning.

We all know, of course, that feeders are getting bigger and bigger and fewer and fewer. This change certainly is affecting all phases of feed business, and none more directly than advertising. If we are going after one 20,000-bird laying flock rather than a hundred 200-bird flocks, our methods should be different.

Any feed firm must decide, first, who its customer is today and, secondly, who it wants as a customer tomorrow. And that's not as easy as it looks.

If feeders are rapidly becoming bigger and fewer, should advertising go all out on all feeds in all markets, with the big feeder as the one objective? Maybe, and then again, maybe not. For some it could be the ideal approach; for others, it could mean at least a temporary sales setback. How then do we chart a course?

*EDITOR'S NOTE: The accompanying article deals with the basic question of who the feed customer is, and who he will be in the future, as well as with advertising that will influence him to buy. The author is director of advertising and sales promotion for Nutrena Mills, Inc., Minneapolis. Mr. Berry has been with Cargill, Inc., and its subsidiary, Nutrena Mills, since 1946. He has been Nutrena advertising director since 1953. He received his advanced education at Providence (R.I.) College and the University of Minnesota. This article is adapted from a talk by Mr. Berry at the Dawe's Sales Management Clinic for feed men, sponsored by Dawe's Laboratories, Inc., Chicago.*

**Market Research:** Here is where market research comes in. The first thing to do is make a careful analysis of our present position and present customer. There is only one way to find out what our "market mix" is, and that is to ask the people who feed our products. In this connection, I'd suggest two things:

1. Keep the survey simple. Most important is size of feeding operation—how many hogs, hens or cattle did you have in 1955, 1956, 1957? If

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*for Better Feeds*

SEA PEP BRAND

**SEA PEP** BRAND FISH MEAL

**SEA PEP** BRAND FISH SOLUBLES
(Lassen Process)...liquid or dry

**SEA PEP** BRAND VITAMIN
FEEDING OILS

vanco A
*Patents applied for

**VANCO** DRY VITAMIN A

**VANCO** DRY VITAMIN D

**VAN CAMP LABORATORIES**
A Division of
Van Camp Sea Food Company, Inc.
Terminal Island, California

Exclusive Sales Representatives
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B. A. LUCIUS CO., Fort Worth
M. A. McCLELLAND CO., Kansas City
COOK & HARMS, INC., San Francisco
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**Make Your Customers**
**GOOD Customers... all year 'round**

**SUPREME Brand**
**Condensed BUTTERMILK**

**HERBERT K. CLOFINE, Inc.**
MILK PRODUCTS
315 South Smedley St. Phila. 3, Pa.

the sample is adequate, we know pretty well the type of customer by size and trends in size.

2. If you have made a factual survey, trust the information and base decisions on it.

**"Market Mix":** By "market mix" here's what I mean. Suppose we are trying to determine who our poultry feed customers are by size of flock in a particular state. Comparing size of flocks as reported by our survey and figuring the tonnage each group represents, we might come up with a picture like this:

| | % of All Flocks in State by Size | Brand X Market Mix | Per cent of Tonnage |
|---|---|---|---|
| Under 200 ..... | 25 | 25 | 5% |
| 200-500 ..... | 55 | 65 | 50% |
| 500-1000 ..... | 15 | 8 | 20% |
| 1000 and over.. | 5 | 2 | 25% |

A quick glance shows this feed company how it stands in this state:

1. It is getting more than its share of flocks under 500 birds.

2. It is not doing too well with the larger flock owners.

3. Although only 10% of its customers are larger flock owners, they represent 45% of the tonnage.

4. The 200-500-bird flocks representing 50% of the tonnage are too important to be neglected.

The advertising department could say after studying the chart: "It's simple—all we have to do is double the number of larger feeders and we will have a 50% increase in tonnage." This may be the right approach in some cases, but for an overall approach, it is an over-simplification of the opportunities that are in reach of feed marketing groups today.

For one thing, it gives a picture just of poultry feed customers in only one state. We might have an entirely different profile of our swine or cattle feed customers in the same state, or in neighboring state all three might be different.

**Size of Operation:** How then do we determine who our customer is since he seems to vary all over the map? The one constant we have is size of feeding operation. If we know what our market mix is by size, state by state and product by product, we have a starting place from which we can plan advertising direction both for today and for the future.

Before leaving the question of who our customer is, let's pin-point him a little more, classifying into three groups:

**1. Small feeder** — the one whose feeding operations are just a sideline. If market prospects are bright, he may increase the size of his operation, but basically he's an "in-and-outer."

**2. Average feeder**—the solid farmer who has in years past given most of us a big share of our tonnage. Producing meat and poultry products is a business with him. Many are now trying to decide whether to expand or give up feeding. The number of average feeders will continue to decrease, but as a group they represent a very respectable potential.

**3. Big feeder**—producing meat and poultry products is definitely his number one job. His kind is increasing rapidly. He's a prime target and undoubtedly will have a profound effect on advertising methods in the future.

What motivates these feeders? It's quite obvious we don't all agree on what a farmer wants from a product. One egg feed ad will stress high production; another, feed efficiency; another, disease protection; still another, cost.

**What He Wants:** How do we know which has the strongest appeal. So, we come to the "what" of advertising. Just what does this customer want?

1. The small feeder doesn't have too much brand loyalty, and he often doesn't follow good feed practices. Emotion can influence his buying, and actually he is probably easiest to sell with advertising. He can be readily swayed by discounts and give-aways. He is part of a floating market. We like to have him as a customer, but we can't afford to beam our advertising at him.

2. The average feeder says most


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We can bring to your business unlimited knowledge, accumulated through the years, to help lower costs and build profits.

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There are many good reasons for the exceptional popularity of Dalpac BHT.

For one thing Dalpac is a top-quality feed antioxidant that promotes full assimilation of essential nutrients and protects vitamin potency. Dalpac also prevents rancidity of feed despite long periods of storage and transportation. For feed manufacturers Dalpac means additional profit because vitamin content is protected without over-fortification. And a little Dalpac goes a long way—just 4 ounces to the ton does the job.

Add to all that the fact that Dalpac is quickly available from any one of the locations listed at the right and you'll see why more and more feed manufacturers are finding that they can depend on Dalpac for the results they want.

Dalpac is available nationwide from:

**McKesson & Robbins Chemical Branch Offices and Warehouses**

**ATLANTA 8, GA.** 805 Peachtree Street, N.E.
**BLOOMFIELD, N. J.** 1246 Broad Street
**BOSTON 9, MASS.** 79 Milk Street
**BUFFALO 7, N. Y.** 1807 Elmwood Avenue
**BURLINGTON, IOWA** 100 North 4th Street
**CEDAR RAPIDS, IOWA** 900 Second Street, S.E.
**CHICAGO 80, ILL.** 540 West Randolph Street
**CINCINNATI 2, OHIO** 49 Central Avenue
**CLEVELAND 3, OHIO** 4500 Euclid Avenue
**DALLAS 22, TEXAS** 611 North Field Street
**DAVENPORT, IOWA** 117 Insurance Exchange Bldg.
**DECATUR, ILL.** 60 Industry Court
**DENVER 2, COLO.** 505 Kittredge Building
**DES MOINES, IOWA** 216 Elm Street
**DETROIT 35, MICH.** 12035 Mack Avenue
**HOUSTON 11, TEXAS** 515 Norwood Street
**KANSAS CITY 1, MO.** 1422 St. Louis Avenue
**LOS ANGELES 22, CALIF.** 5353 Jillson Street
**MILWAUKEE 4, WISC.** 531 South Water Street
**MOBILE 9, ALA.** 453 St. Anthony Street
**NEW YORK 3, N. Y.** 225 Fourth Avenue
**OMAHA 1, NEB.** 902 Farnam Street
**PEORIA 1, ILL.** 812 S. Washington Street
**PHILADELPHIA 2, PENNA.** 2418 Lewis Tower Building
**PHOENIX, ARIZ.** Central and Van Buren
**PITTSBURGH 28, PENNA.** 91 Central Square at Washington Road
**PORTLAND 8, ORE.** 630 N.W. 14th Avenue
**PROVIDENCE 1, R. I.** 68 Traverse Street
**ST. LOUIS 2, MO.** 904 Landreth Building
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CHEMICAL DEPARTMENT, McKESSON & ROBBINS, INC.

DALPAC FEED GRADE BHT
©HERCULES TRADEMARK

*A Product of Oxychemicals Division, Naval Stores Department*
*HERCULES POWDER COMPANY* INCORPORATED
*900 Market Street, Wilmington 99, Delaware*

HOSB-1



SW

FOR THE BEST IN

AIR CONVEYORS

SPROUT-WALDRON

MUNCY, PENNA.

**SUNSET FEED & GRAIN CO., INC.**

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**FEED JOBBERS**
AND
DISTRIBUTORS OF

KELLOGG HOMINY FEED — HUBINGER GLUTEN FEED
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PACIFIC MOLASSES — PILOT OYSTER SHELLS
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NOPCO FEED SUPPLEMENTS
WHEAT GERM — WHEAT GERM OIL
AGRI-TECH ALFALFA PRODUCTS

*INQUIRIES APPRECIATED*


feeds are pretty much alike, but when particular brand names are mentioned, he reacts positively or negatively. He is somewhat suspicious of claims, even when documented. He usually accepts a feed company's research findings, but is cautious about new developments. He wants to see someone else try them first.

What does he want? Antibiotics? High-fat rations? Stilbestrol? Our feeds? Not at all—at least not directly. He wants a better home, a new car, a TV set, an education for his sons. The product we sell is just a means to those basic wants. If we can sell him on the idea that our product will help get these things, we have a customer.

He wants time. He wants not just a product but programs that will enable him to feed more units with no increase in labor. He wants help—he's hungry for information that will help improve his feeding operation. He wants recognition—he likes to be known as a man who topped the market or has a high-producing flock. He's really not a complicated guy at all. We just make him seem to be.

3. The big feeder wants exactly the same thing as the average feeder. He's not some strange breed of cat who dropped out of the sky a couple of years ago and started a major farm revolution. He's the average feeder who saw the handwriting on the wall and expanded his operation. We've been talking to him and selling him products for years. That's why average size feeders should be key factors in our advertising plans. They'll be the big feeders of tomorrow.

However, once an average feeder becomes big, advertising has to work harder to influence him. Fewer and fewer times can advertising cause a feeder to change his feed program. But we can make him favorably disposed to our product. To do this, our story must be sharper, more factual and, above all, believable.

**Aim at Big Feeder:** Do we beam our advertising at the big feeder or the average feeder? If you build a selling story persuasive enough to sell your toughest prospect, it should bring quicker response from those more easily influenced.

So, we should beam our story at the big feeder. This also may help the average feeder in deciding whether to expand or get out.

It comes down, then, to what we tell this big fellow.

**Influencing New Feeder:** Here are five suggestions on how best to influence the new type of feeder. They are about as exciting as an old shoe, but, if done well, they'll sell feed.

1. Build a product difference into the story. The feeder's impression that "all feeds are pretty much alike" is, of course, a false impression. We must highlight features of our product that distinguish it from competition. But we must show why it is different, and prove it.

2. Talk profit — the basic buying motive. Feeding efficiency, high production, disease protection, fast growth—all of these can be interpreted in terms of profit.

3. Sell programs and systems. Our customer isn't buying bags of feed today. He's buying the program that offers him the best hope for profit and labor savings in his type of operation.

4. Talk success. Show how other people are making out with your program.

5. Sell service. As a feeder gets bigger, he no longer wants extra services; he demands them.

With more and more of our potential concentrated with fewer feeders, how important will advertising be in selling feed? If we think only in terms of the same advertising patterns we have used up to now, it will play a comparatively minor role in the job ahead. But advertising can adjust to changing conditions.

**New Motives:** In discussing feeders' wants and how to write copy with those wants in mind, we deliberately left out one important factor. As a feeder gets bigger, his basic wants remain the same except that they are intensified, but he takes on a new set of buying motives. On the surface, some of these have nothing to do with the product or advertising. I mean such things as finance, marketing help, bulk feed handling, integration in varying degrees, services of all kinds.

When these factors are used as selling tools, product often becomes of secondary importance. Then it would seem illogical to continue investing big sums in advertising and selling product benefits. This is true, up to a point. Service differences are usually only temporary. Competition soon catches up and everyone is back on a fairly even basis. Product "differences" then again become an important factor.

At any rate, one point is that advertising men can't be content to sell feeds alone. They can't say that financing, feed production and service

***Sensationally New***

**DIAL-THE-GRIND**

The Airmatic's patented "Dial-The-Grind" control can be installed *anywhere* convenient. By remote control, you turn a dial to select any one of 3 screens. The selection of grind is controlled without stopping the mill . . . or the operator leaving the work floor. This revolutionary feature eliminates time wasting screen changes, and permits more flexible, economical mill operation!

**Lets you dial the grind . . . a totally new concept in hammermill control and operation**

With a simple twist of a dial, the revolutionary new FORDS Airmatic Hammermill changes grinds instantly by redirecting air through the selected screen . . . an entirely new approach to hammermill operation! Here, at last, is your solution to common mill problems. The new Airmatic eliminates:

1. Leaving the work floor to change screens.
2. Shutting off the motor to change screens.
3. Jamming, binding, and sticking of screens.
4. Restrictions on locating controls.
5. Necessity of high head room.
6. Push-pull rods, bell cranks, levers, clamps, etc.

The exclusive, patented **AIRMATIC MILL** provides instant screen change even while the mill is being fed! Open throat design permits grinding hay without pre-shredding. Independent fan drive provides maximum capacity and efficiency of operation. The new AIRMATIC is only 46" high for easy installation in plants with shallow pits or low ceilings. The simplicity of design of AIRMATIC provides a screen change mill without the complications normally associated with equipment of this kind.

***For the newest, most modern feed mill equipment, automation engineered to your needs, write to:*** **2901 S. Illinois St.**

**MS** **MYERS-SHERMAN COMPANY** • Streator, Illinois

*Manufacturers of* Fords Hammermill • Molasses Blenders • Vertical Mixers
Corn Shellers • Pneumatic Grainvayors

NOW A COCCIDIOSTAT THAT'S DOUBLY SAFE

# Trithiadol

TRADEMARK

BY Sterwin

**Safe in the mill... Safe on the farm**

TRITHIADOL exhibits complete safety while effectively controlling all major species of coccidia and allowing for early development of immunity. TRITHIADOL'S BEST FEED CONVERSION confirms consistent reports of "No Mortality-No Toxicity" whenever this superior, new coccidiostat is tested or used in field tests or commercial feeding.

## SAFE IN THE MILL

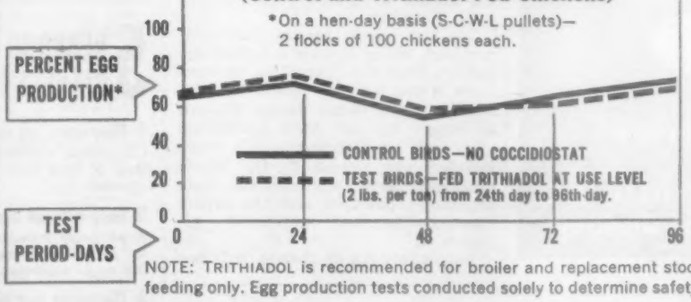
Proved harmless in exhaustive tests on chickens and other warm blooded animals, TRITHIADOL is safe and easy to handle in the mill. No extra time, labor or expense is ever entailed in cleaning of equipment after TRITHIADOL mixtures have been run. When laying mashes are prepared after TRITHIADOL mixtures, no adverse effect on egg production, shell color and texture or interior quality has ever been noted (SEE CHART). However, at present TRITHIADOL is recommended only for broilers and replacement stock.

## SAFE ON THE FARM

Laboratory analysis, field tests and commercial use demonstrate the complete safety of TRITHIADOL. Histological studies of chickens fed TRITHIADOL showed normal tissue development. Field tests supervised by university scientists and leading feed manufacturers revealed no evidence of toxicity. And in commercial use in every producing area, in every season, TRITHIADOL mixed with a wide variety of feed ingredients proved effective and completely safe.

**EGG PRODUCTION IN LAYERS**
**(Control and Trithiadol Fed Chickens)**

*On a hen-day basis (S-C-W-L pullets)—2 flocks of 100 chickens each.




NOTE: TRITHIADOL is recommended for broiler and replacement stock feeding only. Egg production tests conducted solely to determine safety.

• Get the FACT AND FIGURE STORY on how TRITHIADOL'S greater effectiveness and safety bring TOP POULTRY PROFITS. See your Sterwin Technical Representative or write, phone or wire direct.

**ONLY TRITHIADOL HAS ALL THESE MAJOR ADVANTAGES**

1. Effectively controls all economically important species of coccidia.
2. Completely safe for poultry; harmless to other warm blooded animals.
3. Superior feed conversion and weight gain.
4. Permits immunity to develop early.
5. Displays no adverse effects on egg production, shell or interior quality.
6. Comparatively no effect on hatchability or fertility.
7. Is compatible with all commonly used feed ingredients.
8. Stable, free flowing, easily blended with feeds.

Sterwin Chemicals INC.
Subsidiary of Sterling Drug Inc.
1450 Broadway, New York 18, N. Y.
LAckawanna 4-6400

STERWIN BRANCHES LOCATED AT:
Atlanta, Buffalo, Dallas, Evanston, Ill., Kansas City, Mo., Los Angeles, Portland, Ore., Rensselaer, N. Y., San Francisco, St. Louis

# MOST POWERFUL ANTIOXIDANT FOR LOW-COST STABILITY OF FATS

Griffith's® G-12

## All Ingredients—Including "BHT" Approved Safe and Used for Human Consumption

G-12 is the most powerful synergistic, oil-soluble feed grade antioxidant you can use. 100% oil soluble, easily mixed in fats, it assures low-cost protection against rancidity and long stability in storage. Write for free folder of facts about G-12. Specify G-12 in the fats you buy.

## Longer Storage-Life for Feeds

Griffith

THE GRIFFITH LABORATORIES, INC.
CHICAGO 9, 1415 WEST 37TH ST.
NEWARK LOS ANGELES



Hoffman

for complete nutritional service

Hoffman-Taff Inc.
SPRINGFIELD, MISSOURI


are not "their station." They must be alert to all factors influencing sales and be ready to act fast when the balance of power shifts in their direction at any spot in their area.

**Methods:** Here is another challenge in advertising. It concerns methods. Let's consider three features of our changing market: (1) Our customers are getting fewer. (2) Because the big feeder is buying programs rather than individual feeds, he is making fewer buying decisions during the year. (3) Periods of buying decision will no longer be concentrated during certain months; for example, with multiple farrowings, hog marketings will spread out more evenly.

As these trends become no longer trends but basic changes, then advertising methods and perhaps functions must also change. For one thing, "advertising campaigns" as we have known them no longer fit the picture. We need a more selective, continuous method of reaching our prospect. In selecting media, quality of reader may be more important than total circulation, and type of audience more of a factor than coverage area. Direct mail moves up the ladder. Good personal sales tools are a must.

Top advertising planning and judgment are a must. Objectives become more specific. The stakes become bigger and the ad job more critical.

**Brand Image:** Another major objective of modern feed advertising should be selling company in addition to product. The first step is to find out, through research, what our company brand image is. What does the feeder think of when he hears our brand name? How important is the brand image? It is possible that it will become our distinguishing characteristic in a market trending towards equalization of products, services and facilities. When companies offer much the same services, brand image can be a deciding factor.

The advertising man's job is to decide what the brand image is now and whether it will fit the market profile of the future. If it does, we strengthen it by weaving our strong points into copy. If it doesn't, we must tackle the job of changing it, even if it takes an out-and-out institutional approach. Certainly, the reinforcement of company personality looms as one of the major objectives of modern feed advertising.

**More Important Role:** Going back to the question "How important a part will advertising play in selling feed?" It must play a much more important part, or our companies aren't getting full value from their advertising expenditures.

Advertising people can't live in the past. We must recognize that (a) changes in market indicate changes in objectives; (b) changes in objectives indicate changes in methods; (c) changes in methods reflect changes in functions.

We also should realize that modern feed selling is such a radical departure from the "norm" as we once knew it that we may have to set new standards and bench marks. We can no longer be just good advertising idea men or technicians. We must broaden our sphere to the whole marketing area. We need the facts of market research and the expert interpretation of motivation research.

But in this era of change, let's not

"You don't have to go along. It'll find its way up!"

worship change for change's sake. The real basics remain the same whether we are selling soap or feed —influencing sales by influencing minds, through advertising.

Since we are talking to fewer people, our advertising has to be more intensive than in the past.

**Human Terms:** Nor can we lose sight of the fact that people accept or reject products on human terms. Although we can use more and better facts, decisions to buy are based on all impressions, emotional as well as logical.

As our customer grows, his interest in new ideas increases, and he may never be completely satisfied with what he is doing as long as someone is hammering at him with the idea, and proof, that he can do better by changing.

I would say in conclusion that the part advertising will play in the future is strictly up to advertising itself. It can be a leading part or a supporting bit. However, the good feed advertising man is a progressive, imaginative person to whom change is but a stimulus, new methods are not problems but opportunities, and new responsibilities are not duties but rewards. If you give your advertising people a chance to write their role, you might have quite a job stopping them from writing the whole darn book.

### FIRE LEVELS ELEVATOR

HAGERSTOWN, IND. — Damage was estimated at $100,000 after a fire that leveled the elevator of the Hagerstown Grain Co. recently. Byron Pike, company manager, said around 3,000 bu. of soybeans, oats and corn were destroyed along with the building.


## 5 REASONS TO BUY CLEVELAND VIBRATORS

**1 They save you money.**
Cleveland Vibrators guarantee a full flow of feed every time your bins are opened.

**2 They will not damage your bins.**
A properly mounted Cleveland Vibrator will not damage or weaken your bin or its supports.

**3 The initial cost is low.**
An air or electrically operated vibrator will cost you between $42 and $176, depending on bin size, complete with mounting brackets and control accessories—fob. Cleveland.

**4 They are inexpensive to operate**
Cleveland Vibrators operate only when your chutes are open.

**5 They are easy to install.**
Any good mechanic can mount a Cleveland Vibrator in a couple of hours.

*Write for your catalog and price list today.*

THE CLEVELAND VIBRATOR CO.
Dept. F5A, 2929 Clinton Av., Cleveland 13, Ohio



TWINE - WIRE HEADQUARTERS
J. C. SHUFORD COMPANY
The RELIABLE SOURCE for ALL YOUR NEEDS on:
EUROPEAN BALER & BINDER TWINE—"Dutch King", "Volto", "Shuco", "Red Setter"
Also twine especially made for tying round bales
MEXICAN BALER & BINDER TWINE—"Bulldog", "Modelo"
DOMESTIC BALING WIRE—"Shuco"
Volto
Dutch King
"If it's tied see Shuford"
216 W. Kinzie Street, CHICAGO 10, ILLINOIS

## FORMULATION

(Continued from page 28)

cine, phenylalanine, threonine, valine, histidine and tyrosine.

However, he said, to get closer to the ultimate in results, to express more fully the genetic potential of the turkey, it will be necessary to go even further in providing for amino acids which in the past have not been given specific consideration. Some new information on amino acid values of feedstuffs made it possible to determine amounts of five more amino acids in rations, for a total of 18 out of the 23. The five most recently added to the researchers' formula studies are glutamic acid, aspartic acid, alanine, proline and serine.

In looking for a more practical ration that would duplicate results obtained with the experimental feed, Dr. Thayer and assistants calculated amino acid values in the experimental ration giving best results. These were, in jest, called the "Dunkelgod standard."

Dr. Thayer noted that the tables used in the calculations may not be entirely right, that the "Dunkelgod standard" may not be just right, that some amino acid levels may be higher than needed. However, he said, this "standard" provides a benchmark.

"We have a ration that we know will do a job, and we work from that," he said. "Without some new base from which to go forward, pull back when necessary, and then step out again, it would be impossible to continue moving ahead."

**Turn to Computer**

The scientists soon found, however, that they couldn't go ahead very fast, even though they had some standards and ingredients that would meet them. Things were getting too complex, particularly when it came to balancing 18 amino acids, to say nothing about other nutrients. Late in November they began working on different ingredient combinations, using a desk calculator. One time 13 amino acids would be up to standard and five down; another time five would be up and 13 down.

There was an infinite number of possibilities in formulation. It was obvious, if progress were to be made, that some quicker method had to be found to make a large number of computations in a short time.

Dr. Thayer turned to the university computing center. The center has an IBM 650 computer—a socalled electronic brain made by International Business Machines. Dr. John Hamblen, director of the center, worked with Dr. Thayer, and a technique called linear programming was used to make nutrient calculations. (Also see story on page 29 giving a simple example of a linear programming problem.) By Feb. 1 they had a system that worked.

They were able to feed data on amino acid values and requirements, along with instructions on what was wanted, into the electronic brain. In a matter of minutes, literally thousands of possible combinations of ingredients would be considered by the machine, and all but one, which best met the stated requirements, would be rejected. The computer, in 20 or 25 minutes, did what might take a week or more if calculating manually and still using the same technique.

The comparison with manual calculating is really striking when you consider this information on the capacity of the IBM 650 magnetic drum digital computer The capacity is 2,000 10-digit numbers (data and instructions). Average speeds are 78,000 additions (10-digit numbers) per minute; 5,600 multiplications (10 digit by 10 digit) per minute; and 3,700 divisions (20 digit by 10 digit) per minute. The drum rotates at 12,500 r.p.m. — something like the speed of the satellites whipping around the earth.

Dr. Thayer's experimental ration had 60% of protein concentrates and sources of unidentified factors. It was this part of the ration to which electronic computing was applied in working on new, more practical formulas. Sources of energy, minerals and vitamins made up the other 40%. For these nutrients and their sources, hand calculations have continued.

The scientists in effect told the computer they wanted a new combination of selected ingredients, including protein sources, totalling not over 60 lb., as the "protein concentrate." Some ingredients were desired for unidentified factors, and at least so many pounds of each one were specified. Amino acid values of the ingredients were put into the computer. At the same time, certain levels of each of 18 amino acids for the turkey were specified. All of this information, plus instructions to the machine, was punched on about 400 IBM cards. This "deck" of cards was fed into the computer.

Lights flash and the computer whirs away. In about 20 minutes, a deck of cards with the answers


**DEHYDRATED**
**and**
**SUN-CURED**
**ALFALFA MEAL**

Pellets • Crumbles
Bagged • Bulk

**THE A. B. CAPLE CO.**
Toledo 5, Ohio



Your protection assured by our laboratory control

Lime Crest TRADE MARK BRAND

Rigid laboratory control is not just a hobby! Nor is it a luxury. It is an absolute necessity for the feed manufacturer who wants to be certain that his feeds contain what his nutritionist says they should contain.

Lime Crest trace-mineral pre-mixes are made under rigid laboratory control. You can use them with full assurance that they will always put into your feeds what they are supposed to put there. *You* are protected by *our* laboratory control . . . and our research.

**LIME CREST TRACE-MINERAL PRE-MIXES**

*Made by* LIMESTONE PRODUCTS CORPORATION OF AMERICA, NEWTON, NEW JERSEY
*World's Largest Producer of Crystalline Calcite Products*

CANADIAN DISTRIBUTOR: The Ash Chemical Co., 353 St. Nicholas St., Montreal 1, P. Q.

tracking down more business?

**WELL, HERE'S A TIP:**

Investigate the exclusive profit-proved Ultra-Lifed Programs. Feed manufacturers from the Atlantic to the Pacific, from Canada to South America, are really building business with the outstanding, exclusive, Ultra-Lifed programs. **Write today for full details—no obligation**

**Ultra-Life LABORATORIES, INC.**

Main Office and Plant— EAST ST. LOUIS, ILLINOIS

One of the country's oldest and largest manufacturers of vitamin and trace mineral products


punched in has come spewing out of a companion machine. These cards are put into a tabulator which prints out the calculations and answers. The result, said Dr. Thayer, is a "space age" turkey starter mash formula. Depending on the instructions or restrictions, the computer comes up with formulas representing new combinations of any or all of the chosen ingredients. It tries all possible combinations and then selects those which best satisfy the nutrient standards set by the researchers.

But that's not all. "We still have to go back to the turkey and do test feeding of the computer-designed rations," Dr. Thayer pointed out. "However, we figure that the use of the electronic brain has put us at least a year ahead of where we would otherwise be."

The scientists have varied ingredients and amino acid levels somewhat, and the computer has been used to formulate 10 different starter rations which have been under test this spring. They have been fed to birds up to six weeks of age. Initial results with some have shown feed conversion and growth actually somewhat better than the 1957 experimental ration, which yielded a pound of market turkey on 2 lb. of feed.

It is planned that the most promising rations will be fed to birds grown out to market weight this summer and fall. Then, by next year, the researchers may be very close to practical suggestions.

**Lower Costs**

The current feeds cost $8 to $10 cwt., compared with $23 to $30 earlier. If they work out satisfactorily, Dr. Thayer said, a "tremendous step forward" will have been made in reducing ration costs. The ultimate ration may cost more than today's conventional feeds, he noted, but feed costs per pound of gain should be lower.

Meanwhile, Dr. Thayer plans a good deal of basic work in which amino acid requirements will be given a great deal of attention. Another need is more information on digestibility. One of the things sought is less protein than has been used. Pelleting of the rations has not yet been tried. It may be that this can help, too.

Commenting further on computer use, Dr. Thayer said: "I believe that we are fast approaching the time in poultry nutrition when we will have so many things to consider that it will be impossible to get all nutrients into a ration at proper levels by sitting down at a desk calculator. When one considers all of the amino acids, plus vitamins, minerals, energy and nutrient ratios, the picture is really complex. Nutritionists and industry will have to come to greater use of electronic computers."

In connection with industry applications, it was pointed out that the economics of feed formulation, as well as nutrition, can be handled on a computer. This is done by including data on ingredient costs to come up with the least-cost ration.

Sometimes the computer may provide surprises. The Oklahoma researchers had one formula that did not look at all practical. However, the electronic brain wasn't too crazy. The ration has been fed and is working out very well. In another case, an ingredient which the scientists thought was doing a good job was discarded completely, based on the computer's findings.

Dr. Thayer said use of the computer in his nutrition work is part of a "team" approach to research at OSU. For example, nutritionists draw on the help, experience and facilities of other departments, such as mathematicians, biochemists, economists, etc. The result, he said, is a better understanding of problems and more rapid progress.

And in the case of the computer and the turkey feeds, there is no argument about things being more rapid. The computer did in minutes what research assistants had been unable to do in weeks with desk calculators.


# Boost Livestock Income!

## Minnesota Linseed Meal earns more for livestock raisers when they market

Palatable, slightly laxative Minnesota Linseed Meal conditions—puts a bloom on stock—and helps livestock raisers get top prices when they sell.

The high protein value of Minnesota Linseed Meal is an important feed supplement. It means healthier stock and extra pounds—more income at the market. Sell it straight—by the bag—or mix it with your own brand of ration. *Available in meal, pellet or grit form.*

Suggest Minnesota brand to your feed customers and you'll do them more than a favor. You can *help boost their income.* And, their gain is your gain!

**Minnesota LINSEED OIL CO.**

Minneapolis 21, Minnesota

SUnset 8-9011

*There's a QUALITY DIFFERENCE!*

SW

FOR THE BEST IN

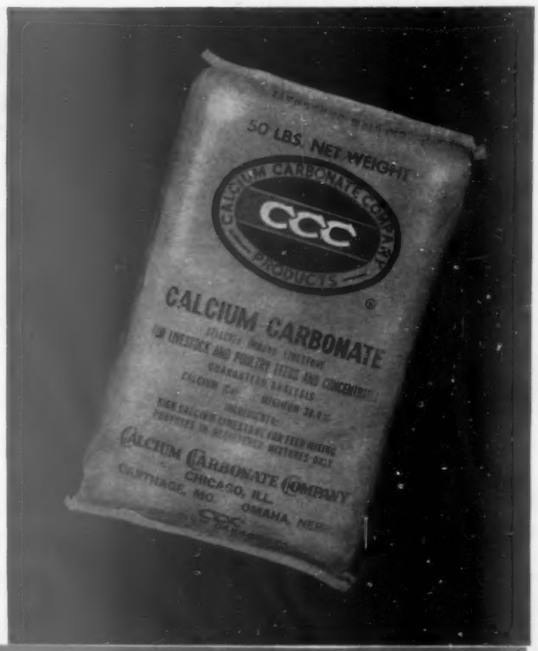
BUCKET ELEVATORS

SPROUT-WALDRON

MUNCY, PENNA.

TODAY

10 YEARS AGO




# CCC *constant* HIGH PURITY CALCIUM CARBONATE MAKES *better balanced** FEEDS

## Let CCC RESEARCH *Work for You!*

- Calcium Carbonate—any desired grind
- Electro (free-flowing) Calcium Carbonate
- Iodized Calcium Carbonate—any desired iodine level
- Manganesed Calcium Carbonate—any desired manganese level
- Iodized-Manganesed Calcium Carbonate—any desired iodine and manganese levels
- Trace Mineral Premixes
- Shellmaker (calcium grit)

*Write, Wire or Phone*

**Calcium Carbonate Company**

*Pioneer Producers of Trace Element Products*

520 South 4th Street • Quincy, Illinois

325 Woodmen of the World Building, Omaha 2, Neb., Box 409, Carthage, Mo.

*

Feed manufacturers are adjusting their formulations in view of modern nutritional developments. For instance, the growth rate of chickens is twice what it was ten years ago. The proper balancing of feed is becoming ever more important, and to balance feed accurately requires that the components be of a constant high quality . . . The Calcium Carbonate Company with its laboratory facilities and deposits of Calcium Carbonate of constant high purity offers feed manufacturers the best possible source of calcium for making feeds of highest nutritional value for all farm animals.

# NOW..! LOAD or UNLOAD BULK FEED

## with the PAMCO BACK SAVER

**Attach this inexpensive AUGER UNIT to a grain box and you can handle any feed in bulk!**

- Ideal for hoist trucks
- Complete hydraulic operation
- Can load as easily as unload
- Will handle bulk feed grain or pellets
- Minimum breakage of pellets

Conversion units can be mounted on your present grain box.

*For Complete Information Write:*

**PRODUCTIVE ACRES MFG. CO.**

**KEOTA, IOWA** **PHONE: ME 63071**

OTHER INSTALLATION POINTS: Delphi, Indiana; Cheraw, Colorado, and Portland, Oregon


# CONVENTION CALENDAR

## New Listings

**For the convenience of readers who scan the Convention Calendar regularly for new listings, those added to the column in the current week appear ahead of the ones which have been entered previously. The following week they will be moved to their proper slot where they will remain until the event is held.**

● ● ●

Sept. 23-24—Iowa Poultry Hatchery Assn.; Veterans Memorial Auditorium, Des Moines, Iowa; sec., LeRoy Kruskop, 409½ Douglas Ave., Ames, Iowa.

Oct. 9—Vermont Feed Dealers & Manufacturers Assn.; Agricultural Science Bldg., University of Vermont, Burlington, Vt.; sec., D. C. Henderson, Poultry Department.

1959

Feb. 23-26 — Colorado Livestock Days; Colorado State University, Ft. Collins, Colo.; chm., Dr. Lamar Esplin.

● ● ●

May 18-20—Grain Processing Machinery Manufacturers Assn.; Hotel Sherman, Chicago, Ill.; sec., Raymond J. Walter, 551 Fifth Ave., New York 17, N.Y.

May 19—Des Moines Feed & Grain Club Field Day; Des Moines Golf & Country Club; chm., Bill Rogerson, 1901 E. Euclid Ave., Des Moines 13, Iowa.

May 21-23—American Feed Manufacturers Assn.; Morrison Hotel, Chicago; sec., W. T. Diamond, 53 W. Jackson Blvd., Chicago 4, Ill.

June 1-3—Indiana Grain & Feed Dealers Assn., mid-summer convention; French Lick-Sheraton Hotel, French Lick, Ind.; exec. sec., Fred K. Sale, 600 Board of Trade Bldg., Indianapolis, Ind.

June 2-3 — Central Retail Feed Assn., Inc.; Hotel Schroeder, Milwaukee, Wis.; sec., Eldon H. Roesler, 1712 W. St. Paul Ave., Milwaukee, Wis.

June 8-10—Eastern Federation of Feed Merchants; Whiteface Inn, Whiteface, N.Y.; exec. dir., Austin W. Carpenter, Box 66, Sherburne, N.Y.

June 9-11—Association of Southern Feed & Fertilizer Control Officials; Heart of Atlanta Motel, Atlanta, Ga.; sec.-treas., Bruce Poundstone, University of Kentucky, Lexington, Ky.

June 10-12 — Alabama Poultry Industry Assn.; Auditorium, Birmingham, Ala.; exec. sec., W. L. Walsh, P.O. Box 567, Montgomery, Ala.

June 10-13—Northeastern Poultry Producers Council Egg Quality School; Rutgers University, New Brunswick, N.J.; chm., Alfred Van Wagenen, 10 Rutgers Place, Trenton 8, N.J.

June 16-18—American Association of Feed Microscopists, Chateau Laurier, Ottawa, Canada; sec., G. M. Barnhart, Missouri Department of Agriculture, Jefferson City, Mo.

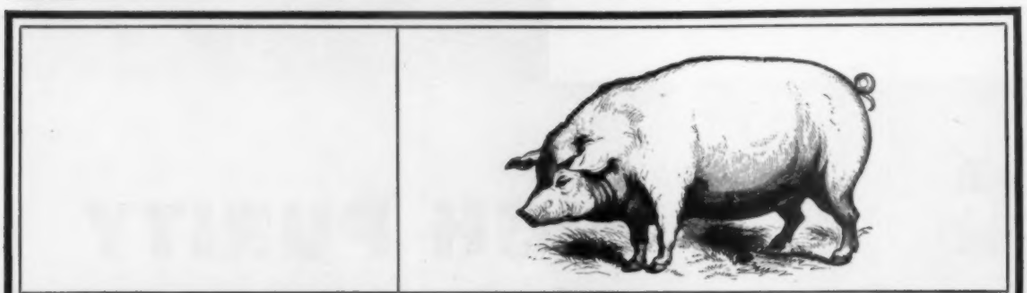
June 16-18—Tri-State Hatchery & Field Agents School; Poultry Science Department, Purdue University, Lafayette, Ind.; chm., David D. Jackson, extension poultryman.

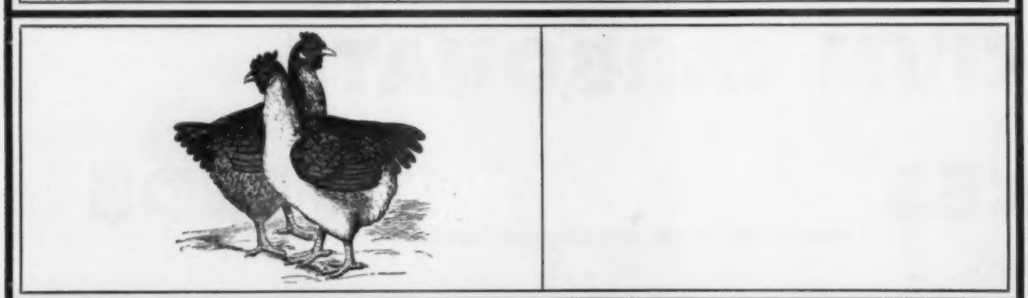
June 17-19—Western Poultry Congress; Santa Rosa, Cal.; sec., Willard A. Smith, P.O. Box 307, Baldwin Park, Cal.

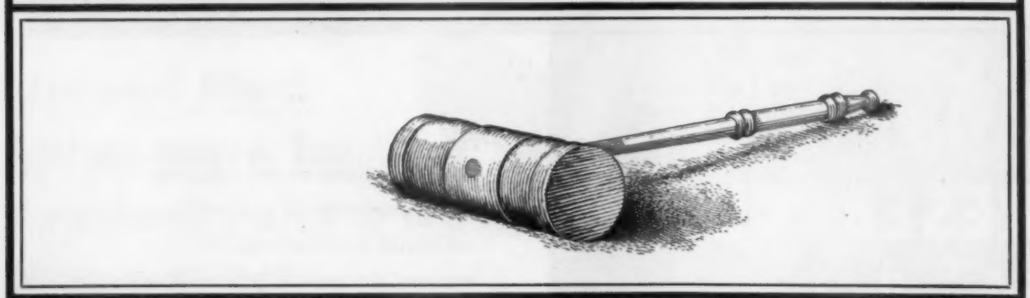
June 19-20—Purdue Poultry Service & Salesmen's Clinic; Poultry Science Department, Purdue University, Lafayette, Ind.; chm., David D. Jackson, extension poultryman.

June 26-28 — Delmarva Chicken Festival; Denton, Md.; chm., John Asher, R.F.D. No. 2, Box 35-A, Georgetown, Del.

June 27-30—Canadian Feed Manufacturers Assn.; Murray Bay, Quebec;





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Schwartz & Co.,(Grain) Ltd.

Victoria Products and Grain (overseas agents) Ltd.

## CALENDAR FOR 1958-59

**MAY**

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**JANUARY**

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**FEBRUARY**

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**MARCH**

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**conv. sec., Rachel Beauchamp, 110 St. Paul Street, East, Montreal, Canada.**

**June 28-July 1—Georgia Feed Assn.; General Oglethorpe Hotel, Wilmington Island, Savannah, Ga.; sec.-treas., Will L. Kinard, 3240 Peachtree Rd. Bldg., Atlanta 5.**

**July 8-9—Cornell Poultrymen's Get-Together; Cornell University, Ithaca, N.Y.**

**July 18-19—Kansas Seed Dealers Assn., Hotel Broadview, Wichita, Kansas; sec., O. E. Case, 609 Wiley Bldg., Hutchinson, Kansas.**

**July 22-25 — American Poultry & Hatchery Federation; Cleveland Auditorium (Ohio); convention mgr., Ed G. Gray, 521 E. 63rd St., Kansas City 10, Mo.**

**Aug. 4-9—Feed Microscopy Short Course, Texas Agricultural Experiment Station, College Station, Texas; sec., E. E. Brown, Assistant State Chemist, Texas Agricultural Experiment Station.**

**Aug. 5-6 — Mid-South Soybean & Grain Shippers Assn.; Hotel Peabody, Memphis, Tenn.; sec., Paul C. Hughes, P.O. Box 692, Blytheville, Ark.**

**Aug. 8-9 — North Carolina Feed Manufacturers Assn.; Grove Park Inn, Asheville, N.C.; sec., A. W. Koon, Box 1664, Spartanburg, S.C.**

**Aug. 18 — National Soybean Processors Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., R. G. Houghtlin, 3818 Board of Trade Bldg., Chicago 4, Ill.**

**Aug. 18-19 — Kentucky Feed Conference, sponsored by Kentucky Feed & Grain Assn. and University of Kentucky; Campbell House, Lexington, Ky.; sec., Fred H. Schardt, Box 1914, Louisville 1, Ky.**

**Aug. 19-20 — American Soybean Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., George M. Strayer, Hudson, Iowa.**

**Aug. 22—Purdue Swine Day; Purdue University, Lafayette, Ind.; chm., J. H. Conrad, Animal Husbandry Department.**

**Aug. 25-28—Georgia Poultry Institute; Rock Eagle 4-H Club Center, Eatonton, Ga.; chm., J. H. Massey, Extension Poultryman, University of Georgia, Athens, Ga.**

**Sept. 7-8—Grain & Feed Dealers National Assn., Sheraton-Jefferson Hotel, St. Louis, Mo.; chm., Alvin E. Oliver, 600 Folger Bldg., Washington 5, D.C.**

**Sept. 7-9—Louisiana Poultry Improvement Assn.; Jung Hotel, New Orleans, La.; sec., Clyde Ingram, University Station, Baton Rouge, La.**

**Sept. 10-11 — Maryland Poultry Service Conference; University of Maryland College Park, Md.; sec., W. H. Rice.**

**Sept. 10-11 — Maryland Poultry Servicemens Conference; University of Maryland, College Park; chm., W. R. Rice, Poultry Department, University of Maryland.**

**Sept. 11-12—Iowa Nutrition Conference; Iowa State College, Ames, Iowa; chm., Dr. Walter Woods.**

**Sept. 17-19—National Feed Ingredients Assn., Congress Hotel, Chicago, Ill.; sec., Peter W. Janss, 212 Equitable Bldg., Des Moines, Iowa.**

**Sept. 18-19 — Arkansas Formula Feed Conference; University of Arkansas, Fayetteville, Ark.; chm., Prof. E. L. Stephenson, Department of Animal Industry and Veterinary Science.**

**Oct. 7-9—Northeastern Poultry Producers Council Poultry Exposition and Convention; Farm Show Bldg., Harrisburg, Pa.; chm., Alfred Van Wagenen, NEPPCO, 10 Rutgers Place, Trenton 8, N.J.**

**Oct. 8-10—Texas Nutrition Conference; Texas Agricultural and Mechanical College; College Station, Texas; chm., J. R. Couch, Poultry Science Dept.**

**Oct. 12-14—Kentucky Poultry Improvement Assn., and Kentucky Poul-**


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(Especially Prepared for Dry Mix Feeding)

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try Federation; Kenlake Hotel, Hardin, Kentucky; sec., John W. Tuttle, 730 Rose Street, Lexington, Ky.

Oct. 14-15—Virginia State Poultry Federation; Natural Bridge Hotel, Natural Bridge, Va.; sec., J. Paul Williams, 615 E. Franklin St., Richemond, Va.

Oct. 14-16 — Association of American Feed Control Officials; Shoreham Hotel, Washington, D.C.; sec., L. E. Bopst, University of Maryland, College Park, Md.

Oct. 16-17 — Oklahoma Formula Feed Conference, Oklahoma State University, Stillwater, Okla.; chm., Dr. Rollin H. Thayer, Poultry Science Dept.

Oct. 20-21—California Animal Industry Conference, Fresno Memorial Auditorium, Fresno, Cal.; sponsored by University of California and California Hay, Grain & Feed Dealers Assn.; sec., John Gilmore, 1400 10th St., Sacramento, Cal.

Oct. 23-24 — Iowa Seed Dealers Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

Oct. 23-25—Nutrition Conference, Alabama Feed Assn.; Alabama Polytechnic Institute, Auburn, Ala.; chm., Merlin T. Bryant, Brundidge Milling Co., North Main St., Brundidge, Ala.

Nov. 2-5 — National Renderers Assn., Hotel Statler, Washington, D.C.; sec., Miss Jamie C. Fox, 30 N. La Salle St., Chicago 2, Ill.

Nov. 12-14—Midwest Feed Production School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn.; exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 13-14—Cornell Nutrition Conference; Hotel Statler, Buffalo, N.Y.; chm., Prof. Charles Chance, Wing Hall, Cornell University, Ithaca, N.Y.

Nov. 14—Midwest Custom Milling School; American Royal Bldg., Kansas City; sponsored by Midwest Feed Manufacturers Assn., exec. vice president, Lloyd S. Larson, 20 W. 9th St. Bldg., Kansas City 5, Mo.

Nov. 23-25—Western Grain & Feed Assn.; Hotel Fort Des Moines, Des Moines, Iowa; sec., Bob Skinner, 928 Des Moines Bldg., Des Moines, Iowa.

1959

Jan. 26-28 — Southeastern Poultry & Egg Assn., Atlanta, Ga.; sec., Harold E. Ford, 235 E. Ponce de Leon Ave., Decatur, Ga.

Feb. 12-13 — Washington State Feed Assn.; Leopold Hotel, Bellingham; mgr., J. G. Wilson, 814 Second Ave. Bldg., Seattle, Wash.

Feb. 22-24—Colorado Grain, Mill & Feed Dealers Assn.; Shirley Savoy Hotel, Denver, Colo.; sec., R. B. Kelley, 714 Cooper Bldg., Denver 2, Colo.

March 1-3 — Ohio Grain & Feed Dealers Assn., Inc.; Neil House, Columbus, Ohio; sec., G. E. O'Brien, 710 N. Ohio Street, Greenville, Ohio.

March 11-13—Midwest Feed Manufacturers Assn.; Hotel Shamrock Hilton, Houston, Texas; exec. vice president, Lloyd S. Larson, 20 W. Ninth Street Bldg., Kansas City 5, Mo.

## RESEARCH

(Continued from page 24)

corresponding pigs fed corn cobs on the same relative TDN levels.

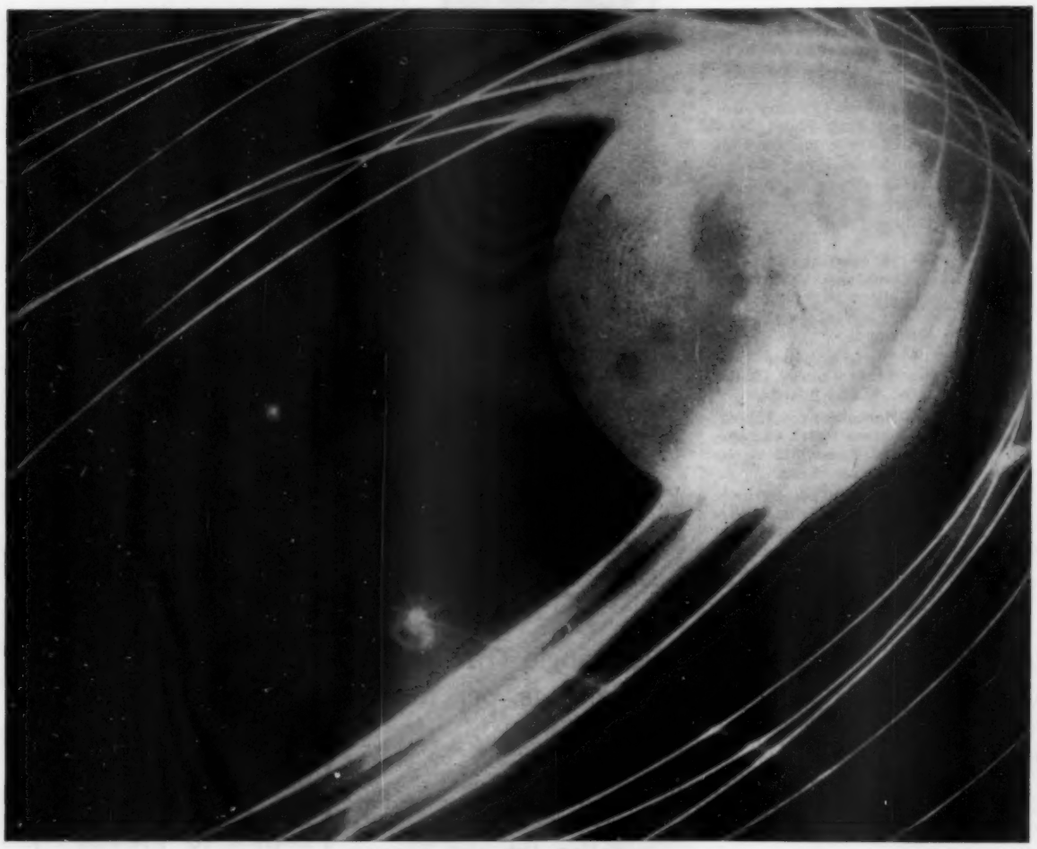
The highest feed efficiency was obtained on the hand-fed restricted lot (70% of basal). No significant differences were found between the various protein levels tested in this experiment. It is the general opinion of the authors of this paper that the level of crude fiber in the ration was more highly correlated with both growth and carcass data than either the level of TDN or protein in these rations. If the fiber level of the rations was held to less than 10%, little difference in daily gains was noted.

Higher fiber levels also decreased the dressing percentage, carcass fatback thickness and leaf fat weights. The highest grading carcasses were secured from the pigs fed the basal ration, and those fed the 62% and 69% TDN levels diluted with corn cobs and alfalfa hay, respectively. The last two lots were even better than the basal lot. Restriction produced longer length of ham and hind-leg, and higher percentages of viscera. Gilts produced significantly leaner carcasses than barrows, and the leanest of all carcasses produced were on the 69% TDN with alfalfa hay ration, but these carcasses were of decidedly inferior carcass quality and grade.

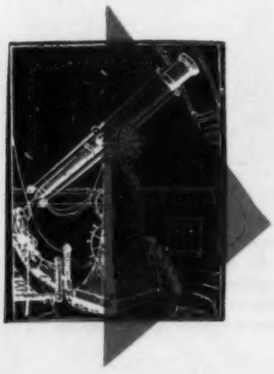
**COMMENT:**

Feeding for desirable consumer carcass grade with a maximum of "lean pork" and a minimum of "fatback" presents one of the most crucial problems facing the swine raiser. Many workers have demonstrated that the carcass and growth patterns of swine can be altered since the first classical work of McMeekan and Hamond. Although self-fed rations have been successfully used in the feeding of pregnant sows and gilts, and to some extent with lactating ones, their use in commercial fattening operations has not been widespread due to general lack of information as to results and methods to be used. Hand-feeding to control carcass quality will give desired results, but the labor situation will prevent most commercial hog men from adopting the practice.

This paper answers some questions of importance to both packers and hog men. First of all, if the fiber level of the ration is less than 10%, according to these results, self-fed rations will give good results. The 69% TDN corn cob ration actually produced slightly higher carcass grades, fully as fast daily gains, at no more feed cost than the control. Although the percentage of lean cuts was not significantly increased when compared with the control, the trend is for these figures to be higher for the increased fiber level of the 69% TDN corn cob ration. Increasing the fiber level above the 10% level, as in the 62% TDN corn cob ration and both the 69% TDN and 62% TDN alfalfa hay rations, increased percent-

ARE CROWN MULTIWALLS REALLY SUITABLE FOR SPACE TRAVEL?



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We're not trying to answer these questions—yet. Frankly, we're too busy assuring the bright future of Crown Multiwalls in *other* ways.

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To meet the ever expanding market, new Crown Multiwall Bag Plants have recently been constructed—one in Antioch, California, the other in Bogalusa, Louisiana.

To keep abreast of new manufacturing concepts and new packaging ideas, Crown Zellerbach is constantly modernizing and improving its facilities.

These things all add up to the fact that Crown Multiwalls really *are* shooting for the stars—in quality, in service, in dependability. And when the time comes for space travel in its literal sense—we'll be ready for that too.

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Get the most out of your layers and breeders with Wirthmore's controlled feeding program for replacements. It has proved effective for all popular breeds and with all Wirthmore feeds for growing replacements.

This program is backed by five years of careful research and over two years of successful use in the field. It was the *first* program to restrict total feed consumption on a "per pound" basis. It was the first program to take into consideration the nutritional needs of the growing pullet at different ages. Wirthmore research has shown that controlled feeding is superior to any other method of feeding replacements during the growing period.

Whether you are feeding market egg or breeder pullets, the Wirthmore controlled feeding program means more profit per bird for you. Here are some of the advantages that research and field experience prove you can expect from the Wirthmore program:

1. **Improved egg production.**
2. **Less feed per dozen eggs.**
3. **More income per bird.**

## Controlled Feeding Pays!

Harold and Dorothy Glover, owners of Red Dot Poultry Farm, Alton, N. H., keep 3600 hybrid layers. Their chicks are started on Wirthmore Chick Starter and at 8 weeks are switched to a controlled feeding program using Wirthmore Grow & Egg pellets and oats. During the laying period Hi-Ener-G 16 mash is fed, supplemented with pellets.

A recent Red Dot flock laid 246 eggs per bird housed in twelve months. No culling was done and mortality was only 5% for the entire year. This flock consumed 4.4 lbs. of feed per dozen eggs.

A current flock at this farm has average 82% production for 5 months.

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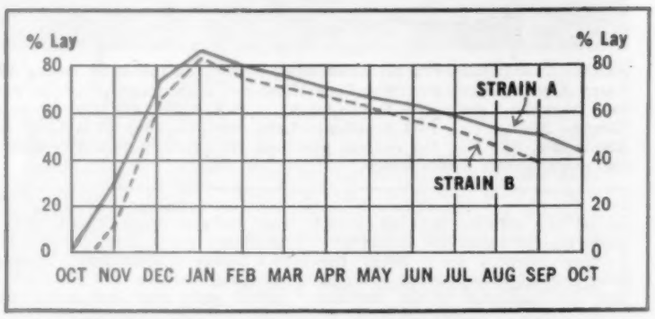
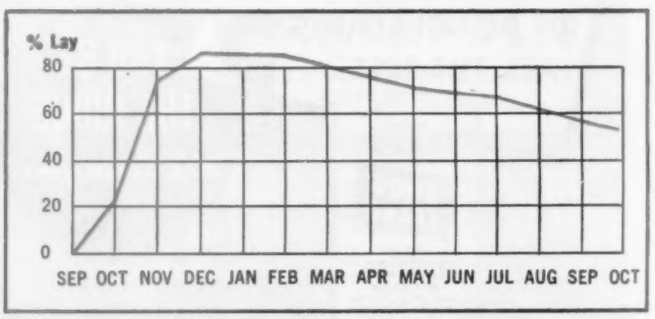
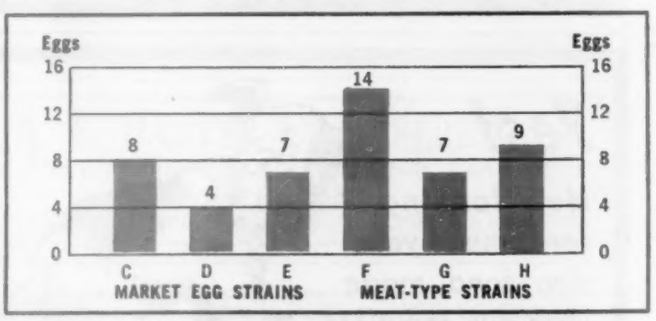
## Research Data Supports Wirthmore Program



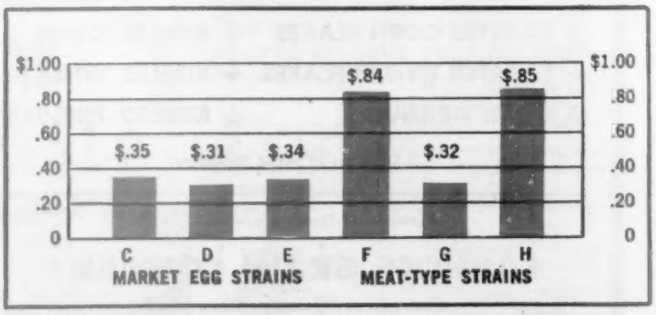

EGG PRODUCTION FOR MEAT-TYPE BREEDERS GROWN ON CONTROLLED GROW & EGG AND GROWING SCRATCH
(1956-57 Laying Year)




EGG PRODUCTION FOR A MARKET EGG STRAIN GROWN ON CONTROLLED COMPLETE GROWING PELLETS
(1956-57 Laying Year)




EXTRA EGGS PER BIRD FROM PULLETS REARED ON CONTROLLED FEEDING VS. FULL FEEDING




EXTRA INCOME PER BIRD FOR PULLETS REARED ON CONTROLLED FEEDING VS. FULL FEEDING

**SERVICE AWARD—For his outstanding service as president during 1956, Larry Alley (center), Pay Way Feed Mills, Inc., is presented a leather briefcase from the Kansas City Feed Club by L. D. Compton (left), Commander-Larabee Milling Co., 1957 president of the club. Looking on is L. E. Cox, Bemis Bro. Bag Co., the current president. The presentation was made at the recent spring dinner dance.**

age of lean cuts but lowered carcass grade beyond acceptable standards.

Other workers have noted that fiber level of swine rations is important for maximum gains. Axelsson and Eriksson have stated that for maximum gains, using wheat straw as a source of fiber, 6.57% fiber was optimum. Lathrop and Bohstedt reported gain and feed consumption were normal for pigs consuming up to 7.5% fiber in oat mill feed types of rations. Feed manufacturers should keep a close watch for further information on proper fiber levels for growing and fattening pigs. Most commercial rations commonly used today may be possibly somewhat too low in fiber for best carcasses combined with best feed lot performance. Although the benefits to be derived from only increasing fiber slightly (to a level of 7.5 to 10%) would be small in terms of general carcass improvement, the net effect on the total packer kill might lead to somewhat better consumer acceptance of the product at relatively little cost to the farmer producer.

●

## Value of Adding Corn Silage and Limited Quantities of Hay to a Grass Silage, Limited Grain Ration for Dairy Heifers

● H. A. Keener, F. E. Allen, N. F. Colovos, A. C. Paul and H. A. Davis, University of New Hampshire; Journal of Dairy Science, Vol. 41, No. 3.

**ABSTRACT:**

Twenty four heifers (12 Holstein, 12 Guernsey) were raised from a few days of age to two years of age on a commercial milk replacer (20% crude protein — maximum allowed consumption 2½ lb. daily for a total of 200 lb.) 500 lb. of concentrate (16% crude protein—1953 New England College Conference ration — maximum daily consumption 2½ lb. for a total consumption of 300 lb.), and one or more of the following forage combinations:

(1) Grass silage alone, free choice.

(2) Grass silage and corn silage (50-50), free choice, and limited hay fed at the rate of ¾ lb. per 100 lb. bodyweight daily.

(3) Grass silage and corn silage, free choice.

(4) Grass silage, free choice, and limited hay fed at the rate of ¾ lb. per 100 lb. bodyweight.

The feeding of the various forages was started as soon as the calves would eat them and continued throughout the experimental period. The grass silages used were early-cut mixtures of timothy, bromegrass and native grasses containing relatively small proportions of Ladino clover and lesser amounts of other legumes. Most of the grass silages used were preserved by the wilting method, with a few lots being preserved by the use of sodium metabisulfite. The quality varied from lot to lot. The corn silages were harvested in the glaze stage and were of average quality. The hays used were early-cut, field-baled mixtures, similar in botanical composition to the grass silages. All animals were allowed access to trace-mineralized salt blocks in their stalls, and a mixture of equal amounts of trace-mineralized salt and dicalcium phosphate in the exercise lot. They were permitted exercise as weather permitted. Irradiated yeast was fed to insure an adequate intake of vitamin D (amount and type not stated in article.)

The data showed that there was a highly significant increase in growth when a limited amount of hay was added to the silage rations, and a highly significant decrease in growth when corn silage was added to the grass silage or grass silage plus hay rations. This is because the addition of the hay increased energy consumption, while the feeding of corn silage decreased it. Similar effects on protein consumption were also observed.

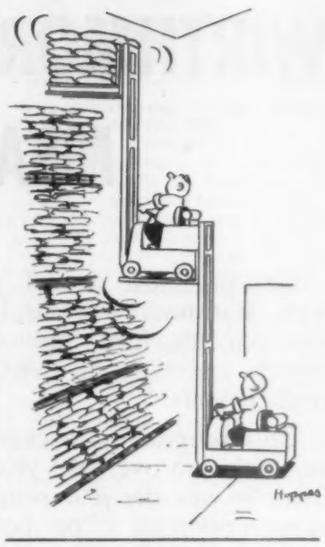
When the data were pooled, the addition of the limited amount of hay to the rations resulted in increases of 16% in body weight, 20.3% in energy consumption, and 23.8% in protein consumption. When corn silage was added to the ration, the decreases amounted to 15% in weight gains, 28% in energy consumption and 30.5% in protein consumption. These results agree well with those of Sykes (1955) as to the value of limited hay feeding with silages. The results from corn silage are somewhat surprising, and not in agreement with most commonly held ideas.

The Guernseys in the experiment grew at a more nearly normal rate than the Holsteins because they ate relatively more energy and protein in terms of their body requirements.

From the growth standpoint, the only satisfactory results were obtained when the experimental animals were fed early-cut grass silage supplemented with limited amounts of hay. However, the breeding results indicated that this method is not satisfactory since several extra months were required to get the animals into production. Guernseys fed in this manner averaged 97% of Morrison's normal, while Holsteins averaged 91% of Morrison's normal. All the lots which received hay required increased numbers of services per conception, in spite of growing larger; this point needs further study. The other feeding methods were not satisfactory because the gains were slower, and the animals were delayed in becoming sexually mature.

**COMMENT:**

This study was conducted to see if a maximum part of the concentrates in heifer growing rations can be replaced with lower cost nutrients from forages of high quality. These results simply indicate that growth must be supported by adequate nutrient intake. Since the nutrient intake was determined by the palatability of the forage and the capacity and desire of the animals to consume the various forages, it does not show that hay is necessarily a better feed than grass silage, or that corn silage is a poorer one! Also, this study indicates that dairymen need to pay careful attention to proper feeding of growing dairy heifers for good growth, early sexual maturity and good breeding results. This experiment can be used by feed men to promote their increased sale and use of heifer feeds.



### GRAIN FIRM CHARTERED

OKLAHOMA CITY, OKLA.—Jackman Grain Co., Inc., Altus, has been granted a charter. Capital stock was listed as $100,000. Incorporators are D. S. Jackman, Nora E. Jackman and D. S. Jackman, Jr.

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FIVE-POINT PROGRAM

# Small Mill Gets Big Results From Planned Merchandising

By Al P. Nelson
Feedstuffs Special Writer

Map out a varied, yet consistent, merchandising program for a small feed mill and what do you get?

In the case of the Moran Feed Mill, Lima, N.Y., owned by Willett Moran, you get a profitable volume of business. In fact, his business and annual profit have increased since 1949 when he bought the mill, which he now operates with three employees.

What makes this man's business tick profitably in a highly competitive area?

An observer can point out a number of reasons, as follows:

**Consistent advertising:** Mr. Moran says that farmers read a lot nowadays, especially direct mail, local newspapers and shopping guides. Therefore, he carries a weekly ad in a local shoppers' guide. Also, about once a month, he sends out 300 postcards advertising his feeds and farm supplies. Sometimes he lists prices. Sometimes he doesn't.

Often a new farmer will walk into the mill, holding a postcard in his hand. "I want some of this feed you advertised," he'll say. That's how Moran knows his postcard advertising pays.

Usually at the bottom of each postcard is this copy, "A card or phone call will bring our feed or salesman to your door." The salesman usually is Mr. Moran himself, a hard worker.

Also on each piece of direct mail he lists his lines of merchandise—chicks, calf feeds, seeds, dog meal, fertilizers, poultry supplies, farm supplies. "There's no harm in telling people what you handle," he says. "It gives them buying ideas."

Quite often, too, Mr. Moran sends out cards on special products. The cards are furnished by manufacturers. "There's nothing like keeping farmers aware that you are in business and telling them that you want their trade," he says. "Postcard advertising and shoppers guide advertising don't cost much and they really reach the farm trade."

**Call-for-grain plan:** If a farmer in this dairy area wants the Moran Feed Mill to call for his grain and take it to the mill to grind and mix, he can get this service. In these days of qualified labor shortage, this service is appreciated by busy farmers. Mr. Moran finds that this is one way to contact the farmer often, give him a service he needs, get better acquainted with him and suggest additional feeds and merchandise to fill his needs.

"The average feed store has a lot of items the farmers need, but if farmers don't see the merchandise, they don't know you've got it," says Mr. Moran. "We push all our lines when we have the time."

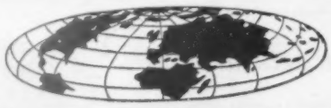
Mr. Moran believes that the small custom mill owner who will call for the farmer's grain and haul it back when ground and mixed has a very important place in the feed picture in many localities. He must be willing to serve the farmer, give him good advice and work carefully with him on feeding programs. The small mill owner can do this better than the larger mill owner who perhaps has other duties and delegates farmer-contact work to subordinates, Mr. Moran points out.

Equipment at the Moran mill is adequate to handle a good volume of grinding and mixing. It includes a Kelly Duplex 1½-ton mixer, a Kelly Duplex molasses blender, a Papec hammermill and a Clipper Cleaner. About 80% of the mill's feed business is in dairy feeds. Farmers in this region use from 200 to 250 lb. of molasses per ton in their feeds and get excellent results in milk production. Mr. Moran makes a 32% dairy ration, and he also handles dairy feeds made by larger companies.

"We are getting along so far without delivering bulk feeds," says Mr. Moran, "but if competition forces us

**PLANS PROGRAM—Consistent advertising, farm service, sound credit practices, a farm supply store and a fertilizer sales program have spelled profits for Willett Moran, Lima, N.Y., mill owner shown in the picture above at his mill.**

USED THE WORLD OVER



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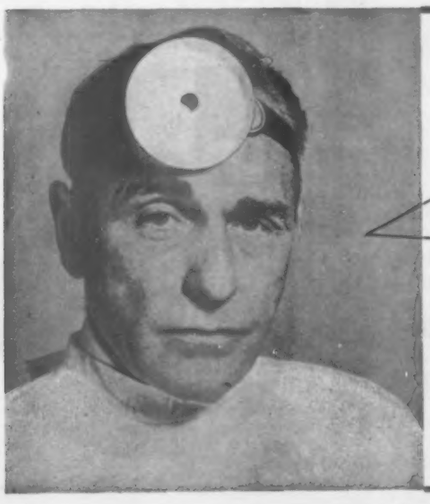

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## Shellbuilder's Profitable

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to do it, we will. We are in this business to stay."

Mr. Moran points out that he and his men give fast service when the farmer brings his grain to be ground. The farmer, Mr. Moran claims, likes to see a feed dealer and his men hustle, and the mill employees try to keep up that reputation. "Farmers don't mind waiting a little longer when they see you're really hustling," said the genial Mr. Moran.

**Credit policy:** No credit is given after 30 days at this mill. Mr. Moran tries to have every customer understand this, and the policy is working very well. If a man pays cash when he gets his feed he gets a 10¢ bag discount. Many small-lot buyers, up to five bags, take this discount. "If you have a rigid credit policy and offer discounts for cash, you lessen collection expense and get quick turnover on your capital," says this young feed dealer.

**Farm supplies store:** Mr. Moran has converted part of his building into a farm supply store. Here he sells farm hardware, seeds, gloves, poultry and barn equipment, remedies, etc., as well as insecticides and spray materials. These lines generally carry a fine markup, he reports, and he makes many extra sales to feed customers.

**Fertilizer selling:** While fertilizer doesn't carry the markup that some other items do, Mr. Moran likes to sell it. First, it gives him another contact with the farmer. It provides a chance to sell him feeds and other items, too. Such frequent contacts help to make farmers form a buying habit at Moran's, and to solidify their thinking of the mill as a one-stop farm supply store.

"I try to get out of the mill for about 3 to 4 calls per day, five days per week," reports Mr. Moran. "By sticking to this schedule, I am able to visit many farmers every month, and it shows up in additional orders, more store traffic and a bigger customer list. Sure, it's lots of work, but that's what it takes in business today. If you don't do it, the other fellow will."

Taylor L. Grizzard

**FIELD DIRECTOR**—Taylor L. Grizzard, Richmond, Va., has been employed by the Virginia State Poultry Federation as field director for the organization's modernization and development program. The program is aimed at generating new vigor in the state's poultry industry. A veteran farm marketing specialist with the market expansion section of the Virginia Department of Agriculture, Mr. Grizzard has been retained by the federation on a 12-month leave of absence to handle the field director assignment, according to Paul Williams, federation executive secretary.

### INCREASES CAPACITY

SULLIVAN, ILL.—The Sullivan Grain Co. is increasing its grain storage capacity by almost 50%, it is announced. A 160-by-50-ft. metal building with 14-ft. walls is being erected. The new building will hold 110,000 bu.


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*The fresh-dried whole whey that's naturally sweet*

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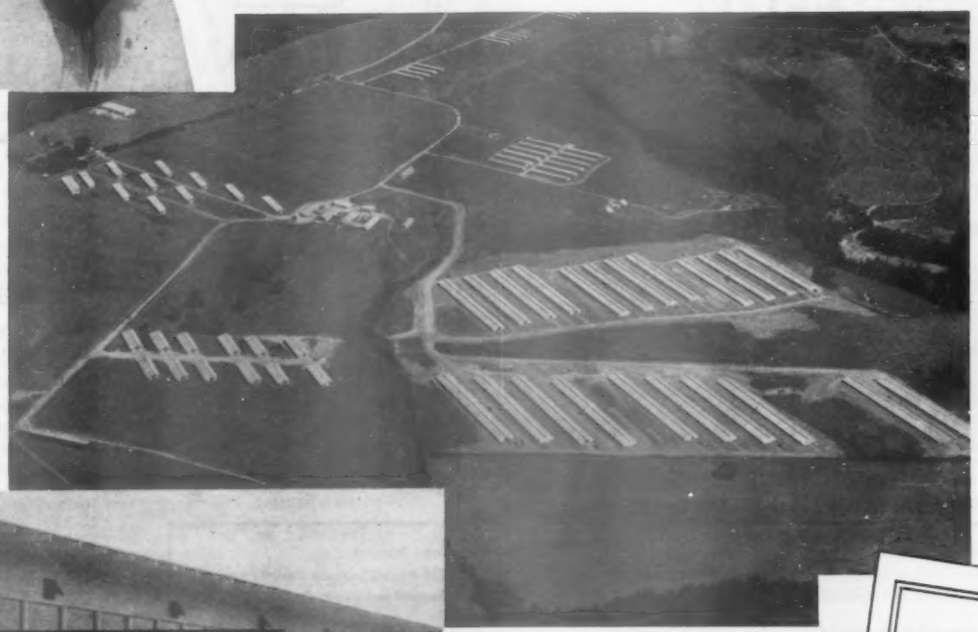

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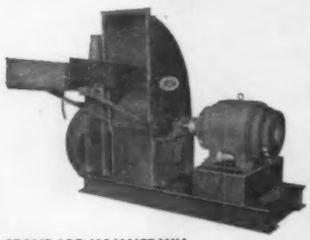

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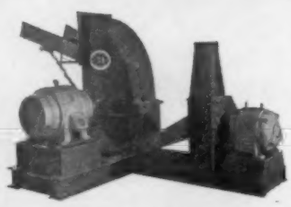

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SECO Hammermills will not slug (grain or hay remain in suspension until uniformly ground); provide larger 41½ inch curved screen on 16, 20 and 24 inch models; give greater capacity—require less power; many more features. In addition, TWIN and TRIPLE models increase overall capacity and greatly reduce costly demand and power charges.

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Most efficient, highest capacity mobile unit for on-the-farm feed service.

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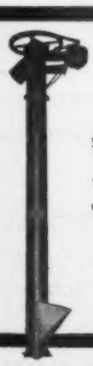

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**PLANNING SCHOOL**—G. A. Carlson (left), Strong-Scott Manufacturing Co., Minneapolis, and T. E. (Ted) Stivers, T. E. Stivers Co., Decatur, Ga., are making plans for the one-day program for the small feed mixer which will be held as part of the three-day Production School to be sponsored by the Midwest Feed Manufacturers Assn. in November. Mr. Stivers is chairman of the custom milling school.

## Plans Being Made for Custom Milling School; Ted Stivers Chairman

KANSAS CITY—T. E. (Ted) Stivers of the T. E. Stivers Co., milling engineering firm at Decatur, Ga., has been named general chairman of the first Custom Milling School presented by the Midwest Feed Manufacturers Assn. This special session will be held on the third day of the association's ninth annual Feed Production School, Nov. 12-14 at the American Royal Building in Kansas City.

J. D. (Don) Johnson, General Mills, Inc., Minneapolis, chairman of the 1958 production school planning committee, pointed out that custom millers may take advantage of a separate one-day enrollment for this Custom Milling School, which is planned especially for the small feed mixer.

Assisting Mr. Stivers in formulating the program is G. A. Carlson, Strong-Scott Manufacturing Co., Minneapolis. With the assistance of the committee, the two men will determine material to be presented and equipment to be shown at the special school.

Subjects to be covered will include receiving, preparation, mixing, pelleting in the custom mill, packaging and shipment. Special emphasis will be on grinding and mixing by the 5-to-30-ton-per-shift stationary mill, relying on larger manufacturers for concentrates. Costs and record keeping as they apply to the small feed mixer will also be included.

The program will be presented by speakers who are experts on various phases of feed mill operation applicable to the smaller operator. Demonstrations of custom milling machinery will be held as part of the school. Reference material will be available for home study after the school.

The regular production school sessions will take place Nov. 12-14. Sessions will be opened the afternoon of Nov. 13 to pre-registered custom milling enrollees in order to give them extra time for viewing the machinery exhibits.

Feed men registering for the full production school, which this year will feature bulk handling of finished feeds, will be entitled to attend any part of the all-day custom milling program Nov. 14, held concurrently with regular specialized sessions.

Enrollment information may be obtained now from the Midwest association, 20 W. 9th St. Bldg., Kansas City 5, Mo.

### NEW FEED PLANT

REFORM, ALA. — The Reform Milling Co. has gone into operation under the direction of O. U. Cook and J. M. Cook. The plant includes machinery for feed production.

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**Price: $1.55 per lb. in 420-lb. drums**

Order a trial pound of ANNOL "S" MM&R today at the drum price . . . only $1.55 per lb.

**MAGNUS, MABEE & REYNARD, INC.**

*The World's Most Famous Supplier of Essential Oils, Concentrated Flavors, and Basic Perfume Oils*

16 DESBROSSES STREET, NEW YORK 13, N.Y.

221 NORTH LaSALLE STREET, CHICAGO 1, ILL.

Since 1895

**NEW EQUIPMENT AT DORSEY CONVENTION—New trailer models and self-unloading bulk feed innovations were of particular interest to these Dorsey distributors and factory personnel from several states. Left to right: Bob Conibear, Henry W. Conibear Co., Lakeland, Fla.; Bruce Walsh, Dorsey regional sales manager, St. Louis; W. M. Lewis, Northeastern Supply Co., Ipswich, Mass.; George Ford, Dorsey regional sales manager, Elba, Ala.; James Coker, Coker Trading Post, Meridian, Miss.; "Junior" and "Pee Wee" Coleman, Coleman Bros., Burleson, Texas.**

## Dorsey Unveils New Line of Trailers

ELBA, ALA. — An array of new models, including a feature line of aluminum trailers, highlighted Dorsey Trailers' annual distributor convention here at the Boca Raton Hotel and Club. Over 250 Dorsey distributors and salesmen from throughout the U.S. and abroad attended.

Other new Dorseys introduced included the "Vanguard," an exterior-post line, "Champ" truck bodies, self-unloading bulk material bodies and trailers, a frameless dump trailer and a three-axle lowboy.

The most advanced electronic testing equipment was used by Dorsey's research and development department to perfect the design features of the 1958 models, according to J. V. Wright, president of Dorsey. "Modern science has enabled us not only to reduce the time required for developing and road-testing new models, but also to build products that will stand up better in the long run."

Horton Fick, vice president in charge of sales, presided at the business sessions at the convention, and T. K. Dorsey, executive vice president, presented awards to leading distributors and salesmen for 1957.

Leading distributor for the year was Harris Truck & Trailer Sales, Cape Girardeau, Mo.

Distributors attending the convention heard a bank president stress that the business outlook for 1958 is good, despite current talk about recession. George Denniston, president of the American National Bank of Mobile, Ala., said that an adjustment in the economy was taking place and that, in the long run, the result would be good for the country.

## Slat Floors Tested In Poultry Houses

LINCOLN, NEB.—A new system of slat floors for poultry houses is being tried at the poultry farm of the University of Nebraska.

The new system was made by employees at the farm in an effort to determine how practical it might be to utilize farm labor in changing a conventional floor system to slatted floors.

Population of hens in the house will be doubled or trebled on the area to study the housing savings and other managerial problems which can be expected by the average farm producer who tries the same sort of conversion, according to M. L. Vaughn, extension poultryman at the university.

"If this system is adopted it will enable the poultryman to double his operation with very little further capital outlay while doubling productivity," states Mr. Vaughn.


# NO Dura-Buket* has ever worn out

*Special Plastic by Fiberite Corp.

**AFTER ONE YEAR ON THE SAME JOB**

METAL BUCKET

**Proved and IMPROVED:** Yes, four years of continued research and testing under actual severe conditions, have proved that the revolutionary improved Dura-Buket outwears, outlasts ordinary elevator buckets many, many times. Dura-Buket is better than ever because it's made of a special strong and shock resistant plastic developed by the *Fiberite Corporation.* Order your supply today.

And Dura-Buket gives you these important trouble and money-saving extras.

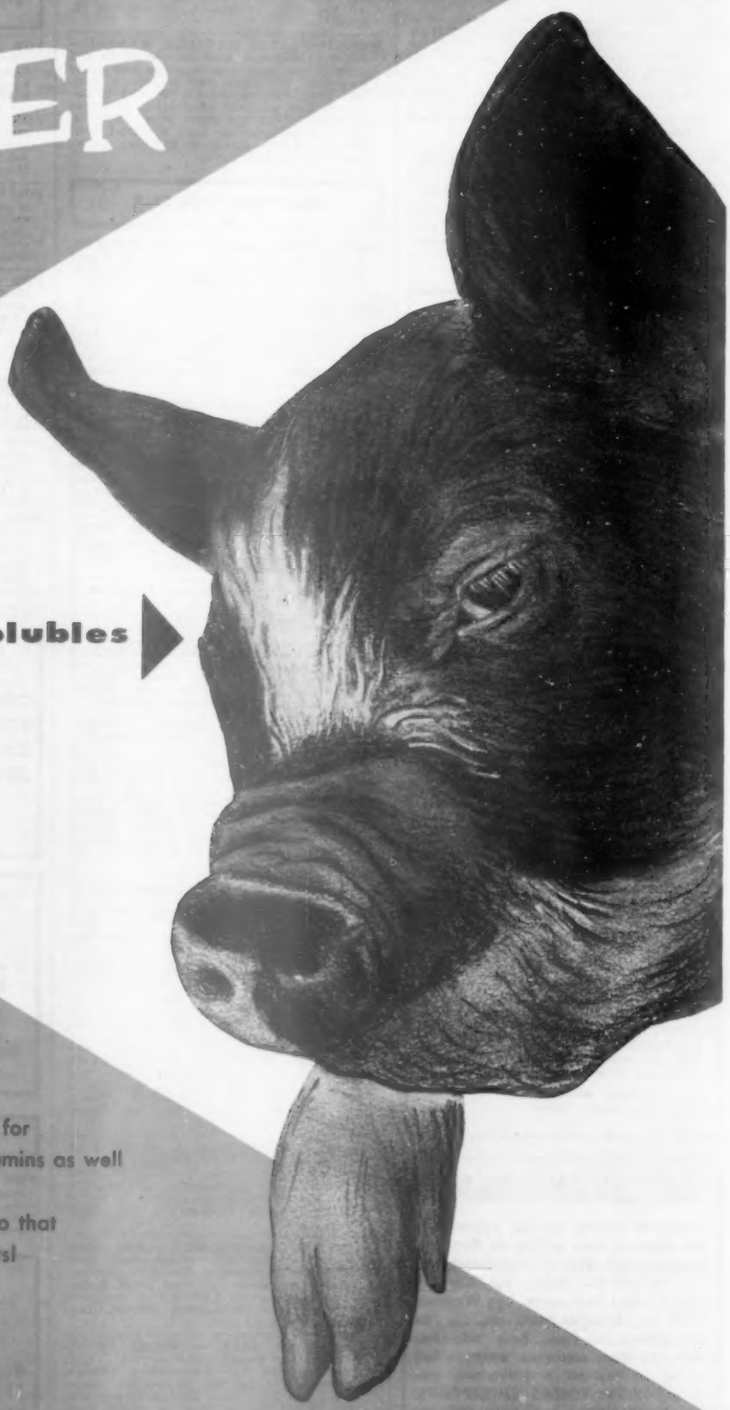
1. Special impact-resistant plastic by Fiberite.
2. Strong and shatter-proof.
3. High speed and lightweight.
4. Spark and static-proof for safety.
5. Self-cleaning for high sanitation.
6. Can't corrode.

FOR COMPLETE INFORMATION AND PRICES WRITE TO:

**Dura-Buket** DIVISION
NATIONAL OATS COMPANY
EAST ST. LOUIS, ILLINOIS

# Piglets to Pigs QUICKER

**. . . with seagram solubles**



Getting piglets off to the right start is the most important stage of the feeding cycle. Research has proved that Seagram Solubles help to get piglets to market weight faster because they are not only a rich source for protein, but also contain all of the important B-vitamins as well as grain fermentation growth factors.

Add this dynamic supplement to your swine rations so that your customers can help themselves to bigger pig profits!

JOS. E. SEAGRAM & SONS, INC.
Louisville, Kentucky
GRAIN PRODUCTS DIVISION

Seagram SERVICE TO AGRICULTURE

# ☆ Classified Ads ☆

**Classified advertisements received by Tuesday each week will be inserted for the issue of the following Saturday. Rates: 15¢ per word; minimum charge $2.25. Situations wanted, 10¢ a word; $1.50 minimum. Count six words of signature, whether for direct reply or keyed care this office. If advertisement is keyed, care of this office, 20¢ per insertion additional charged for forwarding replies. Commercial advertising not accepted in classified advertising department. Display advertising accepted for insertion at minimum rate of $10.50 per column inch. All Want Ads cash with order.**

## MACHINERY WANTED

**WANTED—USED HOWE MIXER.** STATE size, age and price. William R. Rogers, Inc., Beverly, Mass.

**ALL KINDS OF GOOD USED GRAIN** processing machinery. E. H. Beer & Co., Inc., Baltimore 2, Md.

**USED — 30-INCH MUNSON ATTRITION** Mill. Advise age, model number, condition and price. Henry Van Herzeele, Box 185, Atkinson, Ill.

**USED PELLET MILL, GRINDER, SHELLER,** elevator legs, boiler scalper, augers and other feed mill equipment. Bordwell & Co., Washington, Iowa.

**SLIP-RING MOTOR IN GOOD TO EXCELLENT** condition. 200 H.P., 1,750 R.P.M., 3-phase, 60-cycle, 220-volt. Address Ad No. 3776, Feedstuffs, Minneapolis 40, Minn.

**WANTED TO BUY — RICHARDSON** scales, bag closing machines and other good mill, feed and elevator equipment. J. E. Hagan Mill Machinery, Jefferson City, Mo.

## HELP WANTED

**EXCELLENT SIDE-LINE OR FULL TIME** item for salesman selling to feed, grain, farm equipment dealers and farmers. Liberal commissions. Replies will be held confidential. Write Doane Agricultural Service, Inc., St. Louis 3, Mo.

**MILLWRIGHT — MAN WITH EXPERIENCE** in feed mill with knowledge of all machinery common to large operation. Must also be capable of welding and handling of maintenance crew. Mill located in Southeast. Address Ad No. 3754, Feedstuffs, Minneapolis 40, Minn.

**AGGRESSIVE MAN WITH FEED SELLING** experience for responsible position in expanding feed operation in Red River Valley. Excellent opportunity for advancement and promotion. Send resume. Address Ad No. 3777, Feedstuffs, Minneapolis 40, Minn.

**DISTRICT MANAGER WANTED — LARGE** national vitamin company needs experienced man to represent them in Arkansas, Mississippi, Alabama, Tennessee. Background in nutrition desirable. Must be now living and working in the territory. Address Ad No. 3743, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.

**CO-ORDINATOR WANTED — FOR MID-**west Feed Production School Assn. Wishes to employ co-ordinator to work part-time on developing and staging Annual Feed Production School. Feed mill production and materials handling experience essential. Must be capable of conducting and supervising research projects. Salary open. Write giving full details of industry and educational experience. Midwest Feed Manufacturers Assn., 20 W. Ninth Street Bldg., Kansas City, Mo.

## SALESMAN WANTED

**I am looking for a representative presently calling on feed dealers and elevators to carry a well established calf milk replacer. Distributed nationally and backed by national advertising. Will add $300 to $500 per month income for good, energetic man. A few choice territories open.**

**Give complete details. Write P. O. Box 5020, Minneapolis, Minn.**

## SALESMEN WANTED

**Here's a money making opportunity for salesmen now calling on Egg Producers, Feed Dealers and Hatcheries . . . to sell our line of Egg Cartons, Egg Grading Equipment, Egg Washers, Fresh Egg Merchandisers, etc. . . . on Lease-Purchase Plan. Both side line and full time salesmen wanted. Tell us about yourself and territory you cover. Write: TOBIAS ENTERPRISES, 326 North Michigan Avenue, Chicago 1, Illinois.**

## HELP WANTED

**FEED SALESMAN WANTED FOR PROVEN** area—central Illinois. We have a man retiring and need a replacement. The territory is well established and company well known. Commission rate excellent—pay is superior—contact us now. Address Ad No. 3745, Feedstuffs, Minneapolis 40, Minn.

**WORKING SALES MANAGER WANTED—** We need someone who can sell feeds and allied lines, and also manage our sales program. We have just rebuilt a new, fast mill. Our reputation is well established. Now we must build sales. Excellent opportunity for the right man. Reply in full. All information held in strict confidence. Mathis Grain & Elevator Corp., Box 488, Mathis, Texas.

## MACHINERY FOR SALE

**WHIRLAWAY AIRBLAST CAR LOADERS,** cast iron pulleys, new and used feed and elevator equipment. Hagan Mill Machinery, P. O. Box 574, Jefferson City, Mo.

**FOR SALE—ENCLOSED MOTORS;** Richardson Scales; truck scales; hammermills; oat crimpers; horizontal and upright feed mixers; sewing machines; elevator legs; screw conveyors; molasses mixers and pellet mills. J. E. Hagan Mill Machinery, Box 574, Jefferson City, Mo.

**FEED MIXER, 1-TON CAPACITY,** guaranteed first-class throughout, 5 H.P. motor drive. Address Ad No. 3479, Feedstuffs, Minneapolis 40, Minn.

**PNEUMATIC "AIR-CONVEYOR" SYSTEMS** —Positive pressure, Sutorbilt, new or used, any size, capacity, distance or product. Nolder Co., Box 14, Corona Del Mar, Cal.

**AIRPLANE TIRES FOR FIELD CHOP-**pers and wagons. We have wheel assemblies to fit your equipment. Hey Machinery Co., Baldwin City, Kansas.

**FOR SALE OR TRADE — MINNEAPOLIS** Model M-100 Bag Closer. Excellent condition. Would trade for good Fischbein. Reimer Feed & Hatchery, Buhler, Kansas.

**ALLIS - CHALMERS E-60 STATIONARY** power unit, natural gas carburetor. Good condition. Also two-ton Haines vertical feed mixer. Fair condition, cheap. Reimer Feed and Hatchery, Buhler, Kansas.

**CUSTOM GRINDING OUTFIT, CONSISTING** of 60 H.P. Blue Streak Hammermill, ton upright mixer, truck hoist, pit drags and corn sheller. Priced right. Ray Jones, Jefferson City, Mo.; Phone 6-4924.

**UNIVERSAL PELLET MILL, MODEL AAA,** 75 H.P. TEFC motor, crumbler attachment, extra dies, roller shells, starters and controls. Reasonably priced. Address Ad No. 3746, Feedstuffs, Minneapolis 40, Minn.

**FOR SALE — ONE TON HORIZONTAL** Strong-Scott Mixer, gear driven in oil, Model 40-S, excellent condition with 7½ H.P. motor, $750; also 100 lb. premixer, $300. Hess' Buttermilk Co., Dyersville, Iowa.

**SACRIFICE—CHAMPION MOBILE GRIND-**er and vertical mixer mounted on 1957 Dodge, 1½ ton truck. Good condition. Truck 8,000 miles. Sacrifice to close estate. Paul I. Olson, Route No. 1, Cologne, Minn.—Windsor 6-3284.

**FOR SALE—ONE USED 6x16" ROLLER** Mill with 7½ H.P. motor and drive. Mill in good condition. Presently located in Midwest. No reasonable offer refused. Address Ad No. 3772, Feedstuffs, Minneapolis 40, Minn.

**FOR SALE—BLUE STREAK NO. 6A MILL** with pipe, elbow, collector, with 75 H.P. 220-volt motor, starter, ammeter, mounted on base with coupling, mill has magnet, good condition, priced right, write or phone Farmers Cooperative Co., Ellsworth, Iowa.

**COMPLETE HAMMERMILL — ONE COM-**plete Jay Bee 5-W Hammermill with switches and ammeter, 200 H.P. Crocker-Wheeler explosion and dust proof motor, 3-phase, 440 amp., 3,600 R.P.M. complete with Cyclone. Schoeneck Farms, Inc., Nazareth, Pa.

**LIQUIDATION SALE — EIGHT LOUIS-**ville Rotary Steam Tube Dryers, 6'x50', 6'x30', 6'x25', also Dewatering Presses, Davenport No. 1A, No. 2A, No. 3A, Louisville 8-roll 36". Spiral Ribbon Mixers 336, 100, 75, 15 cu. ft. Storage tanks from 1,000 gal. to 20,000 gal., steel, stainless steel, aluminum. Perry, 1403 N. 6th St., Philadelphia 23, Pa.

## SALESMAN

With Purina or similar training to travel established Southeastern Minnesota and also another territory open in Wisconsin for leading seed firm. Seed experience not necessary. We are aggressive merchandisers with research program. Many benefits including profit sharing. This is wonderful opportunity with advancement possibilities. P. O. Box 624, Milwaukee 1, Wisconsin.

## MACHINERY FOR SALE

**CHAMPION MOBILE GRINDER AND MIX-**er units. Champion Portable Mill Co., 2105 Como Ave., Minneapolis 14, Minn.

## BUSINESS OPPORTUNITIES

**FOR SALE—WELL ESTABLISHED FEED** business, manufacturing own brand feeds. Located in south central Iowa. Equipment in A-1 condition. Address Ad No. 3766, Feedstuffs, Minneapolis 40, Minn.

**FOR SALE—FLOUR MILL IN N. CEN-**tral South Dakota. Ideal site for feed mill. Mill is now in operation. Address Ad No. 3765, Feedstuffs, Minneapolis 40, Minn.

**FOR SALE—RETAIL SEED AND FEED** store in east central Illinois. Ideal for man and wife. No grinding or mixing. Brick building, with apartment upstairs. Downtown section. Doing over $100,000 business. Write: Tom Petty, Oakland, Ill.

**FOR SALE — NATIONALLY KNOWN** flaxseed cleaning and grinding business—established and located in Milwaukee since 1890. Ideal for ambitious young man or semi-retired father with son. Write Standard Flax-Meal Co., 324 W. Vine St., Milwaukee 12, Wis.

**OPPORTUNITY—IF YOU ARE EXPERI-**enced in the grain elevator business and if you have limited capital and a reputation for integrity, you can own within a very few years a 150,000-bushel elevator and warehouse in Memphis, Tenn. Owner wants to retire. This is a real bargain. Please call or write E. O. Bailey & Co., Inc., 125 Monroe, Memphis, Tenn.; JA 5-1481.

**MILL LOCATED 35 MILES SOUTH OF** Binghamton, N.Y., on Route U.S. No. 11, also on the D.L.&W. R.R. in dairy country. Equipped with 20-inch attrition mill, hammermill, mixer, blender. Usually handles 2,500 tons of feed, 300 tons fertilizer and 4,000 tons bulk lime spreading. Reply to C. D. Bell & Son, Hop Bottom, Pa.

## FOR SALE

**COMPLETE FEED MILL IN TOMS RIVER, N.J. ALL MACHINERY INTACT, READY TO OPERATE.**

**Tidewater Machinery Co.**
**10 South 18th Street**
**Philadelphia 3, Pa.**

Fine Business Opportunities
FEED MILLS and ELEVATORS
*We Can Help You When You Want to Buy or Sell Your Business*
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**MID-WEST BUSINESS EXCHANGE**
Halbert C. Smith Plymouth, Ind.

## MISCELLANEOUS

**NEW PRODUCTION POULTRY BUILD-**ings insulated and lined, including automatic ventilation, 2,500 bird size, complete package $2.40 per bird. Permco Mfg. Co., Peru, Neb.

## FOR LEASE GRAIN STORAGE TANKS

**4 STEEL STORAGE TANKS 114' - 6" DIA. X 30' HIGH. EQUIVALENT 220,000 PLUS BUSHELS EACH TANK.**

**All tanks standing location near Cromwell, Oklahoma. Will lease for in place use. Write or call for further information.**

**SOUTHWEST STORAGE CO.**
**P.O. Box 2534**
**Phone CHerry 2-9128**
**Tulsa, Oklahoma**

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**FEED EXECUTIVE SEEKS ADMINISTRA-**tive position with heavy responsibility. Proven ability with successful history in general management, production, procurement, distribution and sales. Address Ad No. 3764, Feedstuffs, Minneapolis 40, Minn.

**MR. FEED MANUFACTURER HERE IS** your opportunity to hire a qualified and experienced nutritionist. A man with an advanced degree and industrial experience in research and technical service. Write today for information. Address Ad No. 3770, Feedstuffs, Minneapolis 40, Minn.

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**for interview during AFMA convention with feed sales executive seeking new position in Sales and Advertising Management, Sales Training, Promotion, Public Relations. Top references. Phone SAginaw 1-4420 (Chicago), mornings, or write Ad No. 3779, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.**

## HAVE ABILITY—WILL WORK

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- **CAN Sell Feed Ingredients.**
- **CAN Supervise Personnel.**
- **CAN Supply finest references.**
- **WILL Travel or Relocate.**

**Complete resume on request. Available for interview during AFMA convention. Address Ad No. 3760, Feedstuffs, 141 W. Jackson Blvd., Chicago 4, Ill.**

## Cattle Grub Treatment Proves 95% Effective

SACRAMENTO, CAL.—A new internal cattle grub treatment containing an organic phosphate has been tested on several Sacramento Valley beef herds in feedlots and on the range. It has been reported more than 95% effective.

As explained by Dr. P. C. Enge, agricultural extension service veterinarian at the University of California Davis campus, the treatment is administered as a large pill with a balling gun. He says the organic phosphate poisons the animal's bloodstream for three days, and during that period any bloodsucking parasite present, including the common cattle grub, is eliminated.

The material, available in California only for tests, is expected to be on the market in time for the treatment season next fall.

Dr. Enge estimates that the material is good enough not only to eliminate grubs in an individual herd, but if used on all dairy and beef stock within an area, it has the capability of wiping out the entire cattle grub population in as short a time as three years.

## Harry Spires Replaces William L. Hunter

SACRAMENTO, CAL. — Harry Spires has been appointed chief of the bureau of field crops, California Department of Agriculture, according to a bulletin from the California Hay, Grain & Feed Dealers Assn. He fills the vacancy created by the death of William L. Hunter March 16.

Mr. Spires was selected from a state civil service list. He had been assistant chief of the bureau since April 1, 1957. Born in Blairsville, Pa., he received a degree in chemistry from the University of California in 1932.

He entered state service as a junior chemist in the bureau of field crops at Sacramento in 1935, and except for World War II military service, has been employed by the state since then.

The position of assistant chief formerly held by Mr. Spires will be filled by Van Entwistle, formerly supervising feed chemist in the bureau. He entered the service of the California department in 1939.

Mr. Entwistle is a chemistry graduate from Occidental College, California. Before accepting his appointment with the state, he was employed as an industrial chemist in southern California.

## Texas Broiler Council Schedules Convention

COLLEGE STATION, TEXAS — Prominent names in the nation's broiler industry will be featured speakers at the annual industry convention of the Texas Broiler Council scheduled for May 24 at the Fredonia Hotel, Nacogdoches, Texas.

F. Z. Beanblossom, extension poultry marketing specialist and executive vice president of the council, says the program is primarily for the industrial side of the broiler business, but that broiler producers are welcome to attend.

After the 9:30 a.m. keynote address by Frank Sisco, council president, Frank Frazier, executive vice president of the National Broiler Council, Richmond, Va., will talk on "Accomplishments and Goals of the National Council." James Goddard, vice president of the Texas council, will then discuss "Activities of the Texas Council."

A panel discussing "Who is Going to Stay in the Broiler Business?" will be made up of Joseph Higgins, Nichols, Inc., Exeter, N.H.; Fred Gaddis, Gaddis Feed Store, Forest, Miss., and Prof. E. D. Parnell, department of poultry science, Texas A&M College. Earl Deacon, B&D Mills, Grapevine, Texas, will serve as panel moderator.

The afternoon session will begin at 1:30 p.m. with a panel discussion by Mrs. Gwendolyne Clyatt, extension consumer marketing information specialist, Houston; Ira Kiker, Safeway Stores, Dallas; George Anderson, Dudley-Anderson-Yutzy, New York, and Mr. Beanblossom. Their topic will be "How Are We Going to Sell More Broilers Profitably?" Dr. J. H. Quisenberry, head of the department of poultry science, Texas A&M College, will serve as moderator.

The field of broiler merchandising will be discussed by C. G. Bowes, Park Ridge, Ill. Joe Fechtel, president of the National Broiler Council, Dallas, will wind up the program with his summary of the outstanding facts presented.

**ANIMAL HEALTH HIGHLIGHTS—The above persons had prominent parts in the 18th annual meeting of the Animal Health Institute in Washington. At the left is Dr. Byron T. Shaw, administrator of the Agricultural Service, one of the speakers; next to him is another speaker, Dr. Mario Scalera, American Cyanamid Co.; third from the left is Dr. E. L. Jungherr, head, department of animal diseases, University of Connecticut agricultural college, winner of the AHI Distinguished Service Award of $1,000 for 1958. The next five persons hold assignments with AHI. From the left: Dr. Guy A. Railsback, Cutter Laboratories, first vice president; True Davis, Jr., Anchor Serum Co., president; Richard D. Waters, Hess & Clark, Inc., second vice president; Dr. D. H. LeGear, Dr. LeGear, Inc., outgoing president and director; and D. L. Bruner, executive secretary. Dr. Thomas B. Huff, American Serum Co., treasurer, was not present for the officers' picture.**

## Anatomy Researcher Uses "Nervous" Goats

NASHVILLE — A herd of "nervous" goats has become the object of a research project here which someday may help solve a few of man's disease problems. So far, a Vanderbilt University professor of anatomy has determined the condition to be inherited, and nutritional studies have revealed little.

Dr. Virgil LeQuire, the Vanderbilt researcher, has been assembling the small flock of goats from the central Tennessee area, where they have been found to abound. It isn't known yet whether the goats represent an ancient breed or have appeared comparatively recently as a mutation of normal goats.

Dr. LeQuire says the term "nervous" has been applied to this kind of goat due to its peculiar behavior when it becomes frightened, excited, or faced with some emergency that requires action. Instead of being able to run or jump, the goat becomes rigid and for a short time cannot move. If one of them attempts to run and becomes stiff, it falls over and lies with legs outstretched and stiff.

**Fast Recovery**

The attacks last from a few seconds to more than a minute. During this time, the animal can be handled or pushed around easily, said Dr. LeQuire. The muscles gradually relax and the animal soon gets up and walks off slowly. The first steps usually are stiff. After the attack, the goat appears normal for some time and cannot be shocked into another spasm until a period of rest or inactivity.

The researcher explained that the inherited defect is similar to Thomsen's disease in man, in which the muscles freeze or fail to respond after a period of inactivity. He said comparatively little research work has been done with these animals. He plans to compare normal and nervous goats and study their muscular action intensively.

It is reported that all nervous goats in the central Tennessee area are the descendants of an original four or six animals brought into Marshall County, Tenn., in 1880.

Experiments so far have failed to disclose the basis for the behavior of the "nervous" goats, but nutritional studies to date have shown that levels of calcium, inorganic phosphate and sugar in the blood are not significantly different from normal.

## Norman Rogers Gets New Quaker Oats Job

CEDAR RAPIDS, IOWA—The appointment of Norman Rogers as district sales manager, eastern district, central feed division at Cedar Rapids, Iowa, has been announced by the Quaker Oats Co., Chicago.

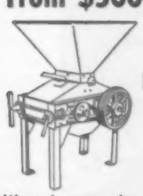
Mr. Rogers joined the company in 1949 as a retail salesman in the St. Joseph, Mo., office. Prior to his recent promotion he was district representative in the St. Joseph feed division.

He succeeds Charles Sproul, who has been named supervisor of sales and services for country elevators. John Hodapp, formerly supervisor of services for country elevators, has been transferred to the Cedar Rapids cereal mill as a production trainee. Grant Bramel, former sales supervisor of country elevators, has been named district field manager.

## Joins New Holland

NEW HOLLAND, PA.—The New Holland Supply Co. has announced that Dave Bufter has joined the sales force of the firm. He will cover territory in western Pennsylvania and western Maryland. He has had several years of experience in the sales of feeds and animal health products. The company handles poultry and livestock health products and equipment.


**Clears $12.00 hourly From $500 investment**



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*Missouri community miller reports investment in modern dust-free grain roller returned so quickly he never missed the money.*

*You, too, can jump in and make a killing now! . . . while others sit idly by with outmoded "grinders" and bellyache about conditions.*

Write today for catalog on all 15 sizes.

H. C. DAVIS SONS'
Box FN-185, Bonner Springs, Kansas

**SIX SUPERIOR GRINDS**

**PAXCO DEHYDRATED CORN COB MEAL** is tailor-made for every feed need, offered in grinds from bulky-coarse to pelleting fine! Eliminate re-grinding and re-handling. Get the best. Write to

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**ADDITIONAL PRODUCTS WANTED**

An active selling organization with outstanding sales record is interested in additional products for sale to feed manufacturers, animal health and agricultural chemicals distributors. Can assure positive distribution and marketing assistance in Midwest and South. Financially responsible with knowledge of markets. Would like to learn of new products and welcome opportunity to discuss value of our selling program.

CHEMICAL FARMING, INC.
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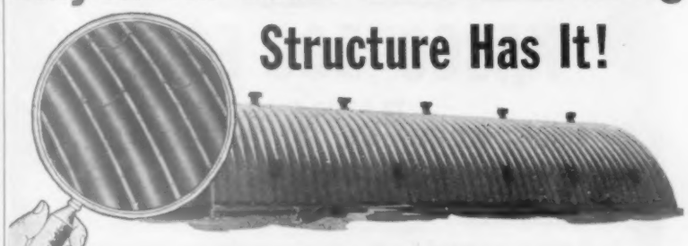

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★MINIMUM MAINTENANCE—Double Corrugation assures triple durability.

Before you consider any building investigate the big savings only an all-steel WONDER BUILDING unit with double corrugation can provide. Simple to erect, you can do-it-yourself—yet a WONDER BUILDING structure is the strongest known.

A WONDER BUILDING structure features amazing adaptability to solve every storage or shelter problem on the farm. You can get a WONDER BUILDING unit with straight sidewalls or arch construction—in a wide range of widths, any length, and any size door opening. All at a low cost afforded only by the patented double corrugation WONDER BUILDING STRUCTURE.

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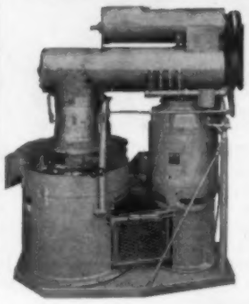

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  The new HELM JUMBO MODEL 100 and JUMBO MODEL 60 give you increased pellet capacity, from poultry to cattle sizes.
- Higher Quality Pellets
  Firm, glossy pellets are an inherent feature of the HELM JUMBO MODEL 100 and JUMBO MODEL 60.
- Economy of Operation
  The high capacity of these mills gives the utmost in economy of operation.
- Controlled Pellet Length
  A special feature of the HELM JUMBO 100 and JUMBO MODEL 60 is positive length control on all pellet sizes.
  In both machines, knives mounted on a turntable are used against die. Desired length of pellets can be obtained by varying speed of turntable.
- EASE OF OPERATION
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DINNER MEETING—Hon. Osie F. Villeneuve (left), member of the Canadian Parliament, recently attended a dinner meeting with Irl A. Daffin (center), president of Daffin Manufacturing Co., Lancaster, Pa., and Dr. William L. Henning (right), Pennsylvania secretary of agriculture. Mr. Villeneuve attended, as an observer, a training school conducted regularly by the Daffin firm for owners and operators of its mobile feed mills.

## Korinek Laboratories Announces Expansion

SAN FRANCISCO — A. L. Ginsbach of Sacramento has been appointed sales manager of Korinek Laboratories, south San Francisco manufacturer of mineral feeds. Mr. Ginsbach is well-known throughout the western states and until recently was general manager and sales manager of Consolidated Products division of National Dairy Products. He has been active in the poultry and livestock field in the West during all his business career.

Frank Kroetch, who recently purchased the 45-year-old firm, also announced the company has secured the consulting services of Dr. Spencer H. Morrison, well-known animal nutrition authority, author and former professor in poultry and dairy nutrition at the universities of California, Georgia, and others. In this expansion move, Mr. Kroetch said, formulation will be modernized, new products added and sales expanded throughout the western states and Latin America. Emphasis will also be placed upon contract formulation, mixing and blocking.


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IRRADIATED DRY YEAST
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MALT SPROUTS
BREWERS GRAINS
DISTILLERS GRAINS
BEET PULP
AND 44 OTHER FEEDS

NOW!
NEW, IMPROVED
KASCO® DOG FOOD
TO BRING YOU
BIGGER VOLUME AND FASTER TURNOVER!

Now more than ever before, it will pay you to *stock, push* and *sell* the famous dog food that's "always a step ahead of competition".

For new, improved Kasco gives your customers everything they have looked for in a dog food!

MORE FLAVOR! Even the most finicky feeders will love its "dog-licious" real meat aroma.

MORE ENERGY! More food value—more scientifically balanced vitamins—more high energy fats, help keep dogs in top condition the year round.

MORE DIGESTIBLE! Digests easier—more completely than any other brand tested—converts more completely into body builders.

ECONOMICAL, EASY TO FEED! Absorbs water instantly—ready to feed immediately. Complete, concentrated Kasco goes farther.

NOW! better than ever...
*America's Most Recommended Dog Food*
Corn Products Refining Company

PROVE TO YOURSELF THAT NO OTHER SALT

FLOWS MORE FREELY

MIXES MORE EVENLY

MAKES FORMULAS MORE EFFICIENT

Than—

BARTON
Mixing Salt

In bag or in bulk, you'll find every desirable mixing quality in BARTON Mixing Salt. BARTON'S pure evaporated salt, plain or iodized, is readily available to provide trouble-free mixing for the feed manufacturer. Available, too, with trace minerals if your formula requires them. Prove to yourself that there is none finer than BARTON Mixing Salt.

FEED DEALERS—
Provide your customers with the extra margin of assurance they get when they supplement every ration with BARTON SALT. In bags or blocks. It is available with or without added minerals. Keep plenty on hand.

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HUTCHINSON, KANSAS

The Salt Cellar of America

**SECRETARY SPEAKS—The featured speaker at the dedication of the Danforth Farm Youth Center on the Ralston Purina Co. research farm was Ezra Taft Benson, secretary of agriculture. He is shown here addressing a crowd of some 700 on a quadrangle which forms the center of the new facility. The statue of a farm youth was unveiled at the ceremonies. Quotations described as "dares" which set the pattern of the life of the late William H. Danforth, for whom the center is named, are engraved on the base of the statue. One of the buildings housing animals to be used in research appears in the background.**

## PURINA

(Continued from page 1)

youth rolling up his sleeves was unveiled at the dedication by two young men representing the 4-H Clubs and Future Farmers of America. The sculptor, Carl Mose, was present for the ceremonies.

The statue is located at the center of the new facility, which consists of two spanking white buildings housing the several dozen animals selected for research work. The buildings are on either side of a grassy quadrangle. FFA and 4-H flags flank the entrance to the center.

Of the dedication, Donald Danforth, Purina board chairman and son of the founder, said: "Nothing could be more appropriate. He dedicated his very life to leadership and to the advancement of agriculture.

"My father had the unique ability to challenge youth, to win their confidence, to make them dream big dreams and to stimulate them to make those dreams come true. The statue here shows a typical American farm youth in all of his strength and vigor, ready for action and ready to face up to the tasks and opportunities that lie ahead."

Included in the audience of an estimated 700 people were more than 300 college and university staff members, including many of the top animal and poultry nutritionists in the U.S. Also present were national youth group officers and a crowd of representative youth club members.

The college men and other guests toured the research farm before the dedication ceremonies were held. Project leaders briefed them on studies under way.

### Objective Cited

J. D. Sykes, Purina vice president, in formally presenting the center for dedication, said: "The objective of the Danforth Farm Youth Center is to promote interest among the farm youth in quality of livestock production, and to emphasize to them the importance of animal agriculture to the total agriculture, and in our national economy. The establishment of the center was further prompted by the fact that there is now no reported research work pointed directly toward farm youth projects."

Raymond E. Rowland, president of the company, was on a European trip and unable to attend the dedication.

Secretary Benson emphasized that current agricultural trends—big investment, bigger farms, the growing need for skilled management, more specialization, the impact of government on farmers' freedom and rising costs—all have deep meaning for youth and for all who are interested in an expanding prosperous and free agriculture.

"We are firm believers in research and in the results it can produce," Mr. Benson said. "But the full benefits of research are to some extent offset by the controls under which some parts of agriculture operate today. Research increases efficiency. The effect of government-imposed allotments and marketing quotas has often been to cripple efficiency.

"It is plain that we cannot go on indefinitely borrowing tomorrow's prosperity for today's income. And it is becoming ever clearer that agriculture's progress comes basically from programs that lower costs, improve quality and expand markets."

### Control of Farming

In discussing the question, "Who will control farming of the future?" Mr. Benson commented probably more extensively on integration in agriculture than he has in other recent public appearances.

"Vertical integration is more the result of fundamental economic and technological changes occurring in the agricultural industry than it is the cause of them," he said.

"Today, compared with total meat production, the tonnage of red meat produced in integrated programs is small. But most observers take it for granted that the future will see more integration.

"A vitally important question for American youth—and for all of us—to consider is what share farmers of the future will have in running their own business."

Mr. Benson said that if farmers are to protect themselves against increasing costs and be in a position to bargain on a more equal basis with industry and labor—"if they are going to keep government or industry from managing the farm business"—they will have to invest more of their efforts and capital in cooperative endeavors.

"They will have to finance more joint buying, more joint service operations, but above all more joint selling," the secretary declared. "It is as simple as that."

In suggesting joint selling efforts by farmers Mr. Benson commented that "you don't have to be big to get into a top quality, top price situation." He cited the experience of an Iowa group of farmers who keep an average of 500 hens and get a premium up to 9¢ doz. for eggs.

The secretary stressed the importance of research in agricultural progress. "We are grateful for the helping hand of industrial firms such as Ralston Purina," he said. "Your research efforts have brought great benefits and a fine product to agriculture. It is a little known fact that industry spends about as much on agricultural research as do the federal and state governments combined. We accomplish much when we work together."

### Plans for Center

Following the dedication, Dr. H. L. Wilcke, assistant director for research for Purina, outlined plans for the center. He said the company hopes to:

- Conduct work that will answer some of the nutritional questions in club animal feeding, including exploration of whether rations fed will influence the final type in the particular animals fed.
- Find practical ways to apply the findings of this special research.
- Develop economical programs for obtaining the objectives listed—with practical rations that will do a good job at the lowest possible cost.
- Develop improved management practices.
- Obtain detailed individual feed consumption data, which is important for young people planning feeding projects in determining how much capital they need.
- Make the unit available for teachers to hold specialized classes and meetings, judging contests and field days.

The unit will be available to farm youth all over the U.S., Dr. Wilcke pointed out. Work will be done with pigs, lambs, dairy heifers and beef steers.

Guests of the company attended a smorgasbord dinner at the Kingsway Hotel in St. Louis May 12 and the Purina Farm Show the evening of May 13.

At the dinner Gordon Philpott, vice president in charge of advertising, related the history of Ralston Purina and incidents in the early business life of William Danforth. Other company officials who participated in the program included Dr. R. M. Bethke, vice president and director of research, and H. C. Schaefer, manager of chemical laboratories.

### Founded in 1894

William H. Danforth and two partners formed the company which was to become Ralston Purina in 1894. A small riverfront feed store specializing in horse feed at first, the company grew to a position of dominance in the feed industry. Much of its development is attributed to the drive and imagination of Mr. Danforth. The company now has 48 plants, including some in Canada and Latin America. Its annual feed tonnage is reported to be about 4 million.

Mr. Danforth, regarded as a rugged pioneer in a new industry, based his career on a fundamental philosophy that "to live is to dare." President of the firm for many years, he became board chairman in 1932, when Donald Danforth became president. When the senior Mr. Danforth died in 1955, his son became chairman and Mr. Rowland moved up to the presidency.

**PRINCIPALS—Chatting at the base of the statue unveiled at the dedication of the Danforth Farm Youth Center are, left to right, Carl Mose, the sculptor; Donald Danforth, chairman of the board of Ralston Purina Co.; Mrs. Benson and Ezra Taft Benson, secretary of agriculture.**

A. V. Jay

## Nopco Names A. V. Jay Eastern Sales Manager

HARRISON, N.J.—The appointment of A. V. Jay as eastern sales manager of the agricultural department of Nopco Chemical Co., Harrison, has been announced by Dr. Melvin Hochberg, vice president of the firm's fine chemicals division.

Mr. Jay has been with Nopco since 1927, and previously served as manager of special accounts for the agricultural division.

The firm has also announced the promotion of Rene Lastreto to the newly-created position of field supervisor for the Nopco West Coast operation. His work will be directed towards contact with feed manufacturers in the western states on problems of feed formulation, and the application of new product developments from Nopco's research laboratories.

The company said that, with an expanded product line, it is enlarging its field staff on the West Coast. Mr. Lastreto will head a program for training field men for territories yet to be assigned.

## *Smaller Turkey Crop Indicated*

CHICAGO—The 1958 turkey crop will not be as large as the record 1957 crop, with the final outcome hinging in a large measure on the weather as it affects rate of lay in breeder flocks and hatchability of eggs yet unlaid.

This observation was part of an analysis of the turkey market situation made at the ninth annual Turkey Industry Forum in Chicago recently. The meeting, sponsored by the National Turkey Federation with the cooperation of the Poultry & Egg National Board, drew some 70 leaders in food merchandising. The purpose of the forum was to evaluate the turkey situation and make merchandising plans.

The number and tonnage of consumer turkeys marketed by producers so far this year have been a third smaller than a year ago. The number and tonnage will continue substantially lower for several months. Turkeys in storage are more than adequate to make up for the decrease in new crop supplies, but the storage birds are almost entirely of heavier weights.

It is anticipated that hatchings for September and October markets could approximate a year ago and that the hatch for November-December marketings might be 5% above 1957. Earlier marketed birds will move at lighter weights and higher prices than a year ago. For the most part, later birds will be of heavier breeds and may sell on a declining market after Thanksgiving.

It was suggested that large storage stocks be marketed as quarter turkey roasts and turkey-by-the-piece.

# THE FEED MARKETS

★ ★ ★ ★

## Demand — Supply — Trends — Prices

**Quotations on feed ingredients shown in these and adjoining columns are wholesale prices, per ton, bagged, for prompt delivery, unless otherwise noted. They are the latest quotations available from Feedstuffs correspondents and are not necessarily those in effect on date of publication. The prices represent fair average trading values and do not necessarily represent extreme low or high levels at which individual sales might have occurred. A descriptive summary of supply and demand factors prevalent in the feed market appears on page 2.**

### A AND D FEEDING OIL

**Minneapolis:** 10,000 A 35¢ lb.; 300 D, 2,250 A 21⅛¢ lb.; 300 D, 1,500 A 20⅛¢ lb.; 300 D, 75 A 18⅛¢ lb.

**New York:** Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 13⅛@15⅛¢, 1,500 A 15⅛@17¢, 2,250 A 17⅛@20¢, 3,000 A 19⅛@21¢; 600 ICU, 1,500 A 16@18¢, 2,250 A 18@19⅛¢, 3,000 A 20@21¢; f.o.b. Massachusetts, New York or Pennsylvania.

**Seattle:** Demand slow; trend steady; supply good; 300 D, 2,250 A 22¢ lb.; 300 D, 1,500 A 18¢ lb.; 300 D, 750 A 17¢ lb.; all ex-warehouse, drums included.

**Chicago:** Demand fair; supply adequate; straight A feeding oil with 10,000 units vitamin A per gram 7⅛@8⅛¢ a million units of vitamin A, l.c.l., packed in 55 gal. drums, f.o.b. Chicago, drums included.

**Boston:** Demand light; supply good; f.o.b. shipping point: 600 D, 1,500 A 18¢ lb.; 300 D, 2,250 A 18⅛¢ lb.; 300 D, 1,500 A 17¢ lb.; 300 D, 750 A 15⅛¢ lb.

**Denver:** Demand fair; trend unchanged; supply ample; 2,250 A, 300 D 22⅛¢.

### ALFALFA MEAL

**Cincinnati:** Demand fair; trend steady; supply adequate; 17% dehydrated, 100,000 vitamin A $50.70@52.20.

**Philadelphia:** Demand dull; supply light; 17% dehydrated $58.

**Ft. Worth:** Demand good; supply sufficient; new crop 20% protein, Texas dehydrated $43, nominally priced, f.o.b. plants; Kansas dehydrated, 17%, 100,000 A $46.05 by rail; suncured No. 1 13% protein, ¼-in. grind, truck $37.

**New Orleans:** Demand fair; trend steady; supply ample; dehydrated 17%, vitamin A guaranteed $51@$51.50; pellets, bulk $47@48.

**Minneapolis:** Weaker trend; fair demand; ample supply; new crop meal, 17%, 100,000 units vitamin A $41.10; 17% reground pellets, 100,000 units A $43.50; granules and oil treated $44, bulk.

**St. Louis:** Demand fair; trend lower; supply ample; dehydrated, 17%, 100,000 A $42; suncured, fine 13% $40.

**Chicago:** Demand slow; supply adequate; 17% dehydrated, with 100,000 units vitamin A guaranteed $42@43; 17% with no A guaranteed $39@40.

**Omaha:** Demand fair; supply ample; most plants running on new crop; 17% dehydrated, 100,000 A, bulk pellets $33, Omaha basis; 17% A, 100,000, arrival sacked meal $35, Omaha basis.

**Buffalo:** Demand and supply fair; trend steady to lower; $56, sacked, Boston.

**Boston:** Demand steady; supply adequate; dehydrated 17% $52.

**Portland:** Demand slow; supply ample; trend unchanged; suncured $38; dehydrated $51, f.o.b. California.

**Kansas City:** Demand fair, few buyers going very far ahead; trend on the easy side; supply adequate, with new crop meal becoming more plentiful, Kansas in full production, Nebraska starting; dehydrated alfalfa meal, 17% protein, 100,000 units vitamin A guaranteed on arrival $36@40, sacked; 18% protein, 136,000 A $41, sacked; 17%, 100,000 A pellets $32@36, bulk; suncured meal demand is light but supplies are also tight because of lack of new crop hay, No. 1 fine ground 1 ¼-in. $32.50, No. 2 ¼-in. $30, sacked.

**Seattle:** Demand slow; trend steady; supply good; 18% protein suncured $40, delivered, truck loads; 136,000 A unit dehydrated $67, delivered, truck loads.

**Denver:** Demand fair; trend steady; supply ample; 100,000 A, 17% $42.

**Memphis:** Demand fair; trend lower; supply ample; dehydrated, 17% protein, guaranteed 100,000 units vitamin A $44.80.

**Los Angeles:** Demand slow; trend steady; supply ample; dehydrated pellet meal, 17% protein, 100,000 A $50; dehydrated meal, 17% protein, 100,000 A $48; suncured crumbles, 15% protein $46@47; suncured meal, 16% protein $44@45.

### ANIMAL FATS (STABILIZED)

**Ft. Worth:** Demand fair; supply adequate; prime tallow, tank cars 7⅝¢ lb.; drums 9¼¢ lb., f.o.b. north Texas packing plants with returnable drums.

**Louisville:** Demand slower; trend steady; supply good; bleachable white 7⅝¢ lb.; white tallow 8¢ lb.; yellow grease 6¼¢ lb.

**Chicago:** Demand and supply fair; bleachable fancy tallow, tank truck or carlots 7⅝¢ lb.; yellow grease 7@7⅛¢ lb.

**New Orleans:** Demand good; trend steady; supply adequate; 8¼@8⅜¢ lb. in tank cars.

**Kansas City:** Demand good, although some reluctance shown because of possible market changes; trend steady; supply adequate to tight; bleachable fancy tallow 7⅞¢ lb. tank car.

**San Francisco:** Demand fair; supply ample; bleachable fancy 8⅝¢ lb.; yellow grease 7⅝¢ lb.

### BARLEY FEED

**Ogden:** Supply normal; rolled $41@45; whole barley $34@39.

**Philadelphia:** Demand slow; supply fair; pulverized $45.75.

**Milwaukee:** Demand good; supply fair; needles 92¢@$1.18 cwt.; ground $37, sacked, Milwaukee.

**New Orleans:** Demand fair; trend firmer; supply adequate; $68@69.

**Seattle:** Demand fair; trend firmer; supply good; whole barley $57, ground barley $57, rolled barley $59, ex-warehouse, l.c.l., sacked.

**Baltimore:** Demand good; supply light; $49.

**Chicago:** Demand good; supply light; $38.

**San Francisco:** Demand fair; supply ample; rolled $59, ground $58.

**Boston:** Demand slow; supply light; $45.

**Portland:** Demand good; supply ample; trend unchanged; rolled $59, ground $57.

**Los Angeles:** Demand slow; trend easier; supply ample; standard rolled $2.90 cwt., sacked; standard ground $2.90 cwt., sacked.

### BENTONITE (SODIUM)

**Cincinnati:** Demand steady; supply adequate; f.o.b. Cincinnati, minimum 30-ton carlots: 80 granular $30.21; 200 mesh fine $29.96.

**Chicago:** Demand steady; supply adequate; f.o.b. Wyoming and South Dakota shipping points; granular 30 mesh $16.50; fine granular, 80 to 100 mesh $13.75; powder, 200 mesh $13.50; f.o.b. Belle Fourche, S.D., minimum 30-ton carlots; 80 granular $13.50 net; 200 mesh fine $13.25 net.

**Denver:** Demand fair; trend unchanged; supply ample; 200 mesh $13.50, f.o.b. Wyoming and South Dakota shipping points.

### BLOOD FLOUR

**Louisville:** Demand fair; trend steady; supply normal; $100@110.

### BLOOD MEAL

**Ogden:** Supply normal; $125 in 100-lb. bags, f.o.b. Ogden.

**Louisville:** Demand fair; trend steady; supply ample; $100@110.

**Portland:** Demand good; trend firm; supply limited; $120.

**New Orleans:** Demand slow; trend steady; supply adequate; $108@110.

**Chicago:** Demand fair; supply adequate; $145@155, guaranteed 80% protein.

**San Francisco:** Demand good; supply tight; $7.25 a unit of ammonia.

**Los Angeles:** Demand good; trend firmer; supply limited; $7.75 a unit of ammonia.

### BONE MEAL (STEAMED)

**Louisville:** Demand slow; trend steady; supply light; $85@90.

**Cincinnati:** Demand fair; trend steady; supply ample; $90, sacked, f.o.b. Cincinnati.

**Ft. Worth:** Demand fair; supply adequate; $85, f.o.b. Ft. Worth, local manufacture.

**New Orleans:** Demand fair; trend steady; supply adequate; $85@86.50.

**Seattle:** Demand and trend steady; supply good; $85, ex-dock, truck lots.

**Chicago:** Demand fair; supply tight; $80.

**San Francisco:** Demand good; supply ample; $75.

**Buffalo:** Demand good; trend steady; supply ample; $90.

**Boston:** Demand and supply steady; $87.

**Portland:** Demand good; supply ample; trend unchanged; $95.

**Los Angeles:** Demand slow; trend unchanged; supply adequate; imported $66.50 in 20-ton lots.

**Denver:** Demand fair; trend steady; supply ample; $75, f.o.b. West Coast.

### BREWERS DRIED GRAINS

**Philadelphia:** Demand slow; supply light; $58.

**Cincinnati:** Demand poor; trend steady; supply adequate; $53.

**Louisville:** Demand better; trend stronger; supply ample; $47; up $1.

**Ft. Worth:** Demand slow; supply moderate; 26% $51.15, delivered Ft. Worth.

**Chicago:** Demand fair; supply adequate; 26% $48.50@49.50.

**New Orleans:** Demand slow; trend steady; supply sufficient; 26% $51.15@52.

**St. Louis:** Demand good; trend lower; supply short; $48.

**Buffalo:** Demand and supply fair; trend steady to lower; $51, bulk, Boston.

**San Francisco:** Demand fair; supply ample; $54.

**Milwaukee:** Demand good; supply tight; $49, Milwaukee.

**Boston:** Demand and supply steady; 26% $50.75; 22% $52.75.

**Los Angeles:** Demand and trend steady; supply limited; $49 bulk, $53 sacked.

### BREWERS DRIED YEAST

**Louisville:** Demand fair to good; trend steady; supply ample; 10@10⅜¢ lb.

**San Francisco:** Demand fair; supply good; 10¢ lb.

**Seattle:** Demand slow; trend steady; supply ample; $12 cwt.

**Boston:** Demand and supply steady; 11¢ lb.

**Buffalo:** Demand good; trend steady; supply ample; $10.25 cwt.

**Chicago:** Demand good; supply limited; 10@11⅛¢ lb. in carlots; 10⅛@12⅛¢ lb., l.c.l.

**Omaha:** Demand fair; supply ample; 11⅛¢ lb.

**Portland:** Demand good; supply ample; trend unchanged; 8⅛¢ lb.

**St. Louis:** Demand good; supply limited; 10¢ lb. in carlots; 11¢ lb. in ton lots; 12¢ lb. in less than ton lots.

**Cincinnati:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

**Pittsburgh:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

**New Orleans:** Carlots 10¢ lb.; 5-ton lots 11¢ lb.; ton lots 11⅛¢ lb.

**New York:** Carlots 9⅛¢ lb.; 10-ton lots 10¢ lb.; 5-ton lots 10⅛¢ lb.; ton lots 11¢ lb., f.o.b. New Jersey.

**Milwaukee:** Demand good; supply limited; 10⅛@11⅛¢ lb. in carlots; 10⅝@12⅛¢ lb., l.c.l.

**Denver:** Demand fair; trend unchanged; supply ample; $10 cwt.

**Los Angeles:** Demand and trend steady; supply limited; 10¢ lb. in 5-ton lots; 11¢ lb. in less than 5-ton lots.

### BUTTERMILK-CONDENSED

**Wichita:** Demand good; supply insufficient; $2.75, 100-lb. bbl.

**Ogden:** Supply normal; $4.40, 100-lb. drum.

**Louisville:** Demand slow; trend steady; supply normal; $4.25 cwt.

**Philadelphia:** Demand slow; supply fair; $4.25 cwt.

**Chicago:** Demand slow; supply adequate; $3.25@3.50 cwt. in carlots.

**New Orleans:** Demand slow; trend steady; supply sufficient; 4@4¼¢ lb. in 500-lb. lots.

**San Francisco:** Demand fair; supply good; $5 cwt.

**Boston:** Demand slow; supply light; 3½¢ lb.

**Minneapolis:** Steady trend; good demand; adequate supply; 3⅛¢ lb.

**Los Angeles:** Demand slow; trend unchanged; supply adequate; 5¼¢ lb. in 100-lb. lots; 4¼¢ lb. in 500-lb. lots.

### CALCITE CRYSTALS AND FLOUR

(All prices net, including freight and tax)

**New York:** Crystals $15.30, flour $10.30.

**Buffalo:** Crystals $16.16, flour $11.16.

**Toledo:** Crystals $13.06, flour $13.06.

**Boston:** Crystals $16.69, flour $11.69.

**Limecrest, N.J.:** Crystals $10.50, flour $5.50.

### CALCIUM CARBONATE

**Cincinnati:** Demand fair; trend steady; supply adequate; $8@9 cwt.

**Chicago:** Demand steady; supply adequate; fine grind, plain $9.67; bulk, in hopper cars, fine grind $7.67; bulk, in boxcars $8.17; granular grind $1 premium.

**Seattle:** Demand and trend steady; supply good; $14, ex-warehouse, truck lots.

**Minneapolis:** Fine grind, 50-lb. bag $12.25, 100-lb. bag $11.50; bulk, boxcar $10; bulk, hopper $9.50; coarse grind $1 premium, delivered Minneapolis.

**Los Angeles:** Demand fair; trend steady; supply adequate; $10.25.

### CHARCOAL

**Cincinnati:** Demand good; trend steady; supply adequate; briquets $120, 25-lb. bags, f.o.b. warehouse, Cincinnati.

**Chicago:** Demand quiet; supply adequate; poultry charcoal $106 in 50-lb. multiwalls.

**San Francisco:** Demand steady; supply ample; $141.

**Boston:** Demand and supply light; $95.

**Los Angeles:** Demand slow; trend unchanged; supply ample; hardwood poultry $156 sacked in less than ton lots; $144.50 sacked in ton lots.

### COCONUT MEAL

**San Francisco:** Demand fair; supply ample; solvent $53; expeller $60.

**Portland:** Demand slow; supply ample; trend higher; $61.

**Seattle:** Demand and trend steady; supply ample; $62, ex-dock, truck lots.

**Los Angeles:** Demand slow; trend easier; supply ample; copra cake $60, offshore, May-June.

### COD LIVER OIL (FORTIFIED)

**Boston:** Demand fair; supply good; f.o.b. eastern shipping points: 600 D, 2,250 A 21¢ lb.; 300 D, 2,250 A 20¢ lb.; 300 D, 1,500 A 17½¢ lb.

**New York:** Trend steady; price per lb. in 55-gal. drums (413 to 420 lb.): 300 ICU, 750 A 14⅛@15⅛¢, 1,500 A 16⅛@20¢, 2,250 A 18⅛@21¢, 3,000 A 21⅛@23¢; 600 ICU, 1,500 A 17⅛@19⅛¢, 2,250 A 20@22¢, 3,000 A 22@23¢; f.o.b. Massachusetts, New York or Pennsylvania.

### CONDENSED FISH SOLUBLES

**Boston:** Demand good; supply short; 5¢ lb.

**New Orleans:** Demand good; trend dull; supply light; 50% solids $97.50, f.o.b. Louisiana points.

**New York:** Demand good; trend steady; supply fair; 5@5¼¢ lb., f.o.b. eastern shore.

**Denver:** Demand fair; trend steady; supply ample; $194, dried.

**Los Angeles:** Demand and trend steady; supply limited; 5¼¢ lb.

### CORN GLUTEN FEED AND MEAL

(All quotations for all cities are sacked basis, bulk basis $5 less)

**Minneapolis:** Feed $54.80, meal $86.80.

**Atlanta:** Feed $60.98, meal $92.98.

**Birmingham:** Feed $59.64, meal $91.64.

**Boston:** Feed $59.84, meal $91.84.

**Chicago:** Feed $48, meal $80.

**Cleveland:** Feed $56.14, meal $88.14.

**Denver:** Feed $58.51, meal $90.51.

**Ft. Worth:** Feed $56.96, meal $88.96.

**Indianapolis:** Feed $53.36, meal $85.36.

**Kansas City:** Feed $48, meal $80.

**Louisville:** Feed $55.21, meal $87.21.

**New Orleans:** Feed $58.20, meal $90.20.

**New York:** Feed $59.43, meal $91.43.

**Norfolk:** Feed $58.71, meal $90.71.

**Philadelphia:** Feed $59.02, meal $91.02.

**Pittsburgh:** Feed $56.96, meal $88.96.

**St. Louis:** Feed $48, meal $80.

### CORN OIL MEAL

**Louisville:** Demand slow; supply normal; trend unchanged; $59.68.

**Cincinnati:** Demand fair; trend steady; supply fair; $59.18.

### COTTONSEED OIL MEAL

**Cincinnati:** Demand fair; trend steady; supply adequate; solvent $73; old process $74.50.

**Ogden:** Supply average; 41% $55@70.

**Louisville:** Demand slow; trend steady; supply normal; old process $73.50; new process $72.50.

**Philadelphia:** Demand slow; supply light; $53.50.

**Wichita:** Demand slow; supply ample; 41% old process $67.

**Ft. Worth:** Demand fair; supply sufficient; carlots, 41% old process: $58@58.50 f.o.b. central Texas and Ft. Worth area; solvent 41% low gossypol $56@57, delivered Ft. Worth; pellets $3 additional; cottonseed hulls $18, f.o.b. Ft. Worth.

**New Orleans:** Demand fair; trend stronger; supply ample; 47% old process $77.50 @78.

**Chicago:** Demand slow; supply adequate; hydraulic $74.50@78; solvent $73.50@74.

**St. Louis:** Demand fair; trend steady; supply limited; $67.

**San Francisco:** Demand good; supply ample; expeller $51.50; solvent $51.

**Omaha:** Demand slow; supply plentiful; 41% solvent, sacked $60.

**Buffalo:** Demand poor; trend steady; supply adequate; $82.75, sacked, Boston.

**Kansas City:** Demand slow; trend steady; supply adequate for demand, moving into this area from Texas points; old process meal $62@63, sacked, Kansas City; solvent meal $66@67.

**Boston:** Demand fair; supply light; $82.85 @85.

**Portland:** Demand good; supply ample; trend unchanged; truck $61, rail $70.

**Seattle:** Demand fair; trend firmer; supply good; $63, delivered, truck lots, 41% expeller process.

**Atlanta:** Demand fair; trend steady; supply limited; 41% $71, sacked, immediate.

**Memphis:** Demand dull; trend steady; supply ample; prime 41% protein, old process $63 sacked; new process, 41% solvent $61, nominal, sacked.

**Denver:** Demand fair; trend steady; supply ample; 2% fat, 41% $61, rail.

**Los Angeles:** Demand slow; trend steady; supply adequate; local production, 40% protein $55.

### CURACAO PHOSPHATE

**New York:** Trend steady; ground Curacao phosphate in 100-lb. bags $48 ton, f.o.b. cars or trucks, New Orleans, Jacksonville, Fla., or Philadelphia.

### D ACTIVATED ANIMAL STEROL, POWDERED

**Cincinnati:** Demand fair; trend steady; supply ample; 1,500 ICU 11@12¢ lb.; 3,000 ICU 18¢ lb., warehouse.

**New York:** Trend steady; price per lb. in 50- and 100-lb. bags or 100-lb. drums: 1,500 ICU 8@12¢ bagged, 12@13¢ drums; 3,000 ICU 13@17¢ bagged, 17@18¢ drums; f.o.b. or delivered basis Pennsylvania, Delaware or New York.

**Kansas City:** Demand fair; trend steady; supply ample; 1,500 ICU 9⅛@10¢ lb.; 3,000 ICU 11⅛@13¢ lb., ton lots or larger.

### D ACTIVATED PLANT STEROL, POWDERED

**Chicago:** Demand good; supply moderate; 4,000,000 U.S.P. units per lb., 15¢ lb. in ton lots; less than ton lots 17¢ lb.; 12,000,000 units per lb., 5 tons to a carload 28¢ lb.; ton lots and less 30¢ lb.

### DEFLUORINATED PHOSPHATE

**Tupelo, Miss.:** Minimum phosphorus 13%, minimum calcium 31%, maximum fluorine .12%, $51 net ton, f.o.b. Tupelo in 100-lb. multiwall bags, $48 in bulk.

**Wales, Tenn.:** Minimum phosphorus 18%, minimum calcium 33%, maximum calcium 36%, maximum fluorine .18% $69.12 net ton, f.o.b. Wales, in 100-lb. multiwall bags, $3 less in bulk.

**Houston:** Minimum phosphorus 19%, minimum calcium 32%, maximum calcium 35%, maximum fluorine .18% $69.50 net ton, f.o.b. Houston, 100-lb. multiwall paper bags; $66.50 in bulk.

**Coronet, Fla.:** Minimum phosphorus 17%, minimum calcium 34%, maximum fluorine .17%, carload $60, truckload $60.75, net ton, f.o.b. Coronet in 100-lb. multiwall bags, $57 and $57.75 in bulk.

**Cincinnati:** 18% phosphorus $31, sacked; 13% phosphorus $64.98, sacked, f.o.b. Cincinnati.

### DICALCIUM PHOSPHATE

**Texas City, Texas:** 18.5% minimum phosphorus, 25% minimum calcium, 28% maximum, 0.11% maximum fluorine, granular $77.70 net ton, f.o.b. Texas City in 100-lb. multiwall bags; bulk, boxcars and hoppers, $3 net ton less than bagged material.

**Columbia, Tenn.:** Minimum phosphorus 18½%, minimum 26% calcium, maximum .01% fluorine guaranteed $83.25, f.o.b. Columbia, in 100-lb. multiwall bags; freight equalized with nearest producing point, carload basis; bulk $3 ton less.

**Chicago:** Stock food grade, 18.5% phosphorus, 20,000 lb. or more $83.25 net ton in 100-lb. papers, basis Chicago Heights, Ill., or Nashville, Tenn.; less than 20,000 lb. $93.25; 21% phosphorus, 20,000 lb. or more, $94.50, basis Chicago Heights and Nashville; less than 20,000 lb. $104.50; bulk boxcars or hoppers $3 net ton less than bagged material.

**Bonnie, Fla.:** Minimum phosphorus 18½%, granular $83.25; freight equalized with closest producing point, carload basis.

**Minneapolis:** 18.5% phosphorus, 24% calcium granular or fine ground $94.10, delivered; $3 less in bulk.

**Trenton, Mich.:** Minimum phosphorus 18½%, maximum fluorine .03% guaranteed $83.25, f.o.b. Trenton in 100-lb. multiwalls; minimum phosphorus 21%, maximum fluorine .03% guaranteed $94.50, f.o.b. Trenton in 100-lb. multiwall bags.

**Portland:** Demand good; supply ample; trend unchanged; $116.

**Cincinnati:** 18½% phosphorus $92@93.

**Denver:** Demand fair; trend unchanged; supply ample; 18.5% $77.70, f.o.b. Texas City.

### DISTILLERS DRIED GRAINS

**Cincinnati:** Demand poor; trend steady; supply fair; $60.

**Philadelphia:** Demand slow; supply light; $65.

**Louisville:** Demand good; trend strong; supply light; production light and will be much smaller by June 1; bourbon grains: light $58@60, dark $59@61, solubles $77.

**Buffalo:** Demand fair; trend steady; supply poor; $66, bulk, Boston.

**Seattle:** Demand fair; trend steady; supply ample; $63, delivered, truck lots.

**San Francisco:** Demand fair; supply ample; solubles $55.

**Boston:** Demand active; supply very tight; light $64, dark $65, both nominal.

**New York:** Demand and supply good; trend steady; light $56, bulk, Boston; dark $57, bulk, Boston, plus $5 sacked; solubles $53, sacked, Boston.

### DRIED BEET PULP

**Ogden:** Supply normal; $38@42.

**Ft. Worth:** Demand slow; supply sufficient; carlots, 50-lb. papers $62.50, delivered Ft. Worth.

**New Orleans:** Demand good; trend steady; supply ample; $50@52.

**Buffalo:** Demand fair; trend steady to higher; supply poor; too scarce to quote.

**Milwaukee:** Demand good; supply tight; molasses $56, plain $57, both nominal.

**Portland:** Demand good; supply ample; trend unchanged; $60.

**San Francisco:** Demand good; supply fair; $43.03.

**Boston:** Demand and supply fair; Canadian $67.

**Seattle:** Demand slow; trend steady; supply good; $45, delivered, carlots.

**Atlanta:** Demand slow; trend steady;

supply limited; $66.50, sacked, immediate.
**Los Angeles:** Demand good; trend steady; supply ample; molasses $48.25.

### DRIED BUTTERMILK

**Ogden:** Supply normal; $7.25, 100-lb. bag.
**Louisville:** Demand slow; trend steady; supply normal; 11¼@12¢ lb.
**San Francisco:** Demand fair; supply ample; 11¢ lb.
**New Orleans:** Demand good; trend steady to stronger; supply light; $10@11 cwt.
**Chicago:** Demand good; supply scarce; medium acid $10.25@10.50; sweet cream, none available.
**Buffalo:** Demand good; trend steady; supply limited; $10.95 cwt.
**Milwaukee:** Demand and supply fair; $10.50 cwt.
**Boston:** Demand good; supply tight; 11¢ lb.
**Los Angeles:** Demand slow; trend unchanged; supply adequate; 11¢ lb.

### DRIED CITRUS PULP

**San Francisco:** Demand good; supply fair; meal $52.
**Buffalo:** Demand poor; trend steady; supply adequate; $45, f.o.b. Florida points.
**Boston:** Demand and supply spotty; $46@47.50, f.o.b. Florida.
**New Orleans:** Demand fair; trend steady; supply spotty; $45@47.50, f.o.b. Florida points.
**Atlanta:** Demand good; trend strong; supply limited; $55.50, sacked, immediate; meal $49, sacked, immediate.
**Los Angeles:** Demand good; trend steady; supply adequate; orange pulp: $39 bulk, $44 sacked; lemon pulp: $37 bulk, $42 sacked.

### DRIED SKIM MILK

**Ogden:** Supply normal; $15.15, 100-lb. drum.
**Philadelphia:** Demand slow; supply fair; $12.50 cwt.
**Louisville:** Demand fair; trend steady; supply ample; 12@12½¢ lb.
**Cincinnati:** Demand fair; trend steady; supply adequate; 10½@11¢ lb.
**Portland:** Demand good; supply ample; trend unchanged; 13¢ lb.
**Milwaukee:** Demand and supply fair; $11.50 cwt.
**Chicago:** Demand improved; supply tightening; $10.50@10.75 cwt. in carlots.
**San Francisco:** Demand and supply fair; 13¼¢ lb.
**Buffalo:** Demand good; trend steady; supply ample; spray $10.65 cwt.; roller $11.50 cwt.
**Minneapolis:** Firm trend; good demand; tight supplies; $10.75@11 cwt.
**New Orleans:** Demand good; trend steady; supply ample; $11.50@12 cwt.
**Los Angeles:** Demand slow; trend unchanged; supply adequate; 14¢ lb. in less than ton lots; 13¾¢ lb. in ton lots.
**Boston:** Demand and supply fair; 11¢ lb. in carlots.

### DRIED WHEY

**Philadelphia:** Demand slow; supply fair; $6.25 cwt.
**Louisville:** Demand slow; trend firm; supply ample; 6@6½¢ lb.
**Ogden:** Supply normal; $6.90, 100-lb. bag.
**Cincinnati:** Demand fair; trend steady; supply adequate; $5.25 cwt.; sweet $5.75 cwt.
**Ft. Worth:** Demand fair; supply adequate; carlots, standard $6 cwt., sacked, delivered Ft. Worth or any Texas point or in ton lots, f.o.b. warehouse Ft. Worth.
**Minneapolis:** Firmer trend; good demand; tighter supply; $5.55@5.65 cwt. Other sources quote $5.25 cwt., f.o.b. producers' points for both regular and partially delactosed.
**New Orleans:** Demand good; trend steady; supply tight; $5.70@6 cwt.
**Chicago:** Demand good; supply light; $5.10 cwt., f.o.b. plant.
**Kansas City:** Demand fair; trend steady; supply adequate; $5.25 producers' points for both regular and partially delactosed, with regular in limited supply.
**San Francisco:** Demand steady; supply good; $5.50 cwt.
**Seattle:** Demand and trend steady; supply good; $6.25 cwt., ex-warehouse, l.c.l.
**Boston:** Demand and supply steady; $5.75 cwt. a carlot.
**Portland:** Demand good; supply ample; trend unchanged; $6.05 cwt.
**Los Angeles:** Demand fair; trend firm; supply adequate; $5.75 cwt. in carloads; $6 cwt. in l.c.l.
**Denver:** Demand fair; trend unchanged; supply ample; $7 cwt., $6.10 carlots.

### FEATHER MEAL (HYDROLYZED)

**Ft. Worth:** Demand good; supply very limited; 85 to 87% protein $92.50, f.o.b. trucks, north Texas plants.
**Boston:** Demand steady; supply light; $86, f.o.b. eastern shipping points.
**Los Angeles:** Demand and trend steady; supply limited; $1.25 a unit of protein.
**Salisbury, Md.:** Demand good; trend steady; supply limited; $94, f.o.b. producers' plants.
**Atlanta:** Demand good; trend steady; supply ample; $94 sacked f.o.b. Alabama and Georgia producing points, immediate.

### FISH MEAL

**Louisville:** Demand slow; trend stronger; supply ample; $150@160.
**Ogden:** Supply normal; $2.20 a unit, f.o.b. Coast; 65% $151@153.
**Cincinnati:** Demand fair; trend steady; supply adequate; 40% $160.
**Ft. Worth:** Demand falling off; supply sufficient; Peruvian, 65% protein $141, ex-dock, Houston, immediate delivery; 60% Angola $139.50, immediate.
**Chicago:** Demand quiet; supply very limited; eastern menhaden fish meal, 60% protein $135; western blended, 60% protein, no offerings; Gulf $135; Northwest herring-salmon blend, no offerings; Canadian herring, 73% protein $2.35 a unit of protein; 60% blended $164@167, delivered Midwest points.
**Boston:** Demand and supply fair; $135.
**Portland:** Demand fair; supply ample; trend unchanged; import $2.30; Canadian, $2.40, f.o.b. Vancouver.
**San Francisco:** Demand fair; supply ample; Peruvian fish meal $2.25 a unit of protein.
**Milwaukee:** Demand good; supply fair; $159, Milwaukee.
**Buffalo:** Demand good; trend higher; supply very scarce; $150 bulk, $155 sacked, 60% protein menhaden.
**New Orleans:** Demand fair; trend steady; supply light; menhaden 60% $135; scrap 60% $131, burlaps, f.o.b. Gulf; production extremely limited due to poor fishing weather.
**Minneapolis:** Firmer trend; good demand; adequate supply; 60% meal, delivered, Minneapolis $153.
**Seattle:** Demand fair; trend firm; supply limited; $2.35 a unit protein, ex-dock, Peruvian herring meal.
**Atlanta:** Demand fair; trend steady; supply limited; 60% $142, sacked, immediate.
**Denver:** Demand fair; trend steady; supply short; 70% herring $2.40, f.o.b. Seattle; 60% menhaden $137, f.o.b. Gulf.
**Los Angeles:** Demand slower; trend easier; supply limited; local production, 60% protein $2.37½ a unit.

### HAY

**Ogden:** Supply average; $1 bale; $18 ton in the barn.
**Philadelphia:** Demand slow; supply light; $32@35.
**Louisville:** Demand dull; trend steady; supply good; No. 1 hay, any variety of local $23@26; No. 2 hay, any variety of local $20@23; straw $18@20.
**Cincinnati:** Demand fair; trend steady; supply adequate; No. 1 timothy $23.50; No. 1 red clover $25; No. 1 second cutting green alfalfa $30; No. 1 red clover mixed $27; wheat or oat straw $23.
**Wichita:** Demand almost nil; supply ample; prairie $14, alfalfa $14.
**Ft. Worth:** Demand fair for alfalfa, practically nil for prairie and Johnson grass; supply sufficient; carlots, baled, No. 1 alfalfa $38@40, No. 2 $36@38; prairie No. 2 $26@28; No. 2 Johnson $24@26, delivered Texas common points.
**Seattle:** Demand slow; trend weak; supply good; alfalfa, U.S. No. 2 green $23, delivered, truck lots.
**Boston:** Demand steady; supply ample; No. 2 timothy $40@42.
**Portland:** Demand slow; supply ample; trend unchanged; $25.
**Los Angeles:** New crop Imperial No. 1 $36.50@37.50, new crop U.S. No. 1 $34@35, new crop U.S. No. 2 leafy $32@33, good interest, moderate offerings; U.S. No. 2 green $29@30, U.S. No. 2 $27@28, slow demand, heavier offerings.
**Denver:** Demand slow; trend steady; supply ample; baled alfalfa $25; baled mountain $30.

### HOMINY FEED

**Louisville:** Demand slow; trend weak; supply light; offerings as low as $46.10@50.
**Cincinnati:** Demand fair; trend steady to easier; supply adequate; $51.50.
**Boston:** Demand steady; supply adequate; $57.50.
**Kansas City:** Demand fair to good; trend steady; supply fairly tight; white or yellow $39@39.50 bulk, $42.50@43 sacked.
**Buffalo:** Demand fair; trend steady to lower; supply adequate; $53.50 bulk, Boston.
**Milwaukee:** Demand good; supply fair; $49.50, sacked, Milwaukee, June shipment.
**St. Louis:** Demand slow; trend steady; supply ample; yellow $49.
**Chicago:** Demand fair; supply improving; $49@49.50.
**Seattle:** Demand fair; trend strong; supply limited; $59, delivered, sacked, carlots.
**New Orleans:** Demand fair; trend steady; supply adequate; $57@57.50.
**Memphis:** Demand nil; trend higher; supply ample; white $53, yellow $53.

### LINSEED OIL MEAL

**Cincinnati:** Demand poor; trend steady; supply adequate; new process $71; old process $72.50.
**Philadelphia:** Demand and supply fair; 34% $77.
**Louisville:** Demand slow; trend steady to stronger; supply fair; old process, steady at $75.75; new process, stronger at $74.25.
**Wichita:** Demand fair; supply sufficient; 34% $75.50.
**Ft. Worth:** Demand slow; offerings light; carlots, 34% extracted May-June $80.75; pellets $2.50 premium.
**Denver:** Demand fair; trend steady; supply ample; 34% $79 rail.
**Los Angeles:** Demand slow; trend easier; supply ample; local production, 29% protein $61; new crop June-July $56.
**New Orleans:** Demand slow; trend steady; supply sufficient; 34% protein $50@$1.50.
**Minneapolis:** Firm trend; demand adequate for small supply; new process $55.50 bulk; 22% flaxseed oil screenings unobtainable.
**Seattle:** Demand slow; trend steady; supply ample; $75, delivered carloads, 34% protein.
**Chicago:** Demand fair; supply adequate; solvent $67@67.50; expeller $68.50@69.
**Milwaukee:** Demand good; supply fair; old process $67.25; new process $65.75.
**Omaha:** Demand slow; supply limited; 34% solvent $60.75, bulk, Omaha; 32% old process $61.75, bulk, Omaha.
**Kansas City:** Demand slow; trend steady; supply not plentiful, but adequate for demand; solvent meal $58@58.50, bulk, Minneapolis; old process meal $56.50.
**San Francisco:** Demand fair; supply ample; $64.
**Boston:** Demand and supply limited; old processed $73.75.
**Portland:** Demand slow; supply ample; trend unchanged; $76.

### MALT SPROUTS

**Cincinnati:** Demand fair; trend steady; supply adequate; No. 1 $39.
**Chicago:** Demand fair; supply adequate; No. 1 $32.50@33.50.
**Boston:** Demand and supply limited; $43, nominal.
**Milwaukee:** Demand good; supply fair; odd weights $34.50, even weights $36.50.
**New Orleans:** Demand fair; trend steady; supply adequate; No. 1 $39@40.

### MEAT AND BONE MEAL

**Wichita:** Demand good; supply sufficient; 50% $107.50, f.o.b. plant; 55%, no quotations, no offerings.
**Ogden:** Supply normal; $110 in 100-lb. bags.
**Louisville:** Demand fair; trend steady; supply ample; $92.50@97.50.
**Cincinnati:** Demand good; trend steady; supply fair; 50% meat and bone scraps $99.50, sacked, f.o.b. Cincinnati.
**Ft. Worth:** Demand very slow; supply sufficient; meat and bone, 50% $100@102, f.o.b. or delivered Ft. Worth.
**Los Angeles:** Demand slower; trend steady; supply limited; 50% protein $2.30 a unit.
**New Orleans:** Demand good; supply sufficient; trend stronger; $99.50@102.
**St. Paul:** Easier trend; slow demand; adequate supply; 50% meat scraps $103@108.
**New York:** Demand excellent; supply fair; trend steady; 50% $92.50, 55% $100.60, bulk; 50% $95.50, 55% $103.50, sacked.
**Seattle:** Demand good; trend steady; supply fair; $110, ex-warehouse, 50% protein.
**St. Louis:** Demand slow; trend lower; supply limited; $108.
**Boston:** Demand good; supply fair; $1.65 a protein unit; converted 50% $95.
**Chicago:** Demand fair; supply limited; 50% protein $102.50.
**San Francisco:** Demand good; supply fair; $2.25 a unit of protein.
**Kansas City:** Demand fair to good; trend steady; supply very tight; 50% meat and bone scraps $105@108, sacked.
**Omaha:** $107.50.
**Buffalo:** Demand fair; trend steady; supply ample; 50% meat scraps $100 bulk, $105 sacked.
**Portland:** Demand fair; supply ample; trend unchanged; $2.20 a unit of protein.

### MILLFEED

**Minneapolis:** Weak trend; slow demand; ample supply; bran $38@39, standard midds. $38@40, flour midds. $44.50@47.50, red dog $48.50@50.


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**Kansas City:** Demand light; trend easy to very weak; supply ample to pressing, especially for sacked shorts; bran $35.50@36.25, shorts $35@35.75, sacked; bran $31.75@33.50, shorts $34.25@35, middlings $32.50@33.25, bulk.

**Wichita:** Demand poor; supply ample; basis Kansas City: bran $37.75@38.25, shorts $39.25@39.75; bran declined $2.25@2.50 and shorts $7.50@7.75, compared with the preceding week.

**Ft. Worth:** Demand active for bran, slow for shorts, light offerings of bran, adequate offerings of shorts; carlots, burlaps, prompt, bran $45@46; gray shorts $46@47, delivered Texas common points; $1.50 lower on bran and $6.50 lower on shorts compared with previous week.

**Omaha:** Demand slow; supply ample; sacked bran $38, Omaha basis; sacked gray shorts $39.50; bulk standard middlings $37.

**Chicago:** Prices of millfeeds slipped during the week ending May 14, with bran and standard midds. bearing the brunt of the let-down. Supplies increased somewhat and purchasing was slower. Bran $43@43.50, standard midds. $46@46.50, flour midds. $52@53, red dog $53@54.50.

**St. Louis:** Demand slow; trend lower; supply ample; bran $41.50@42, shorts $42@42.50, sacked; bran $37.50@38, shorts $40.50@41, middlings $38.50@39, bulk.

**Cincinnati:** Demand good; trend of bran lower, middlings steady to lower; supply adequate; bran $49.50, middlings $52.50.

**Boston:** Demand cautious; supply adequate; bran, domestic $54; Canadian $55.50; domestic midds. $55; Canadian $56.

**Buffalo:** Millfeed sales were slow in a declining market, with buyers holding off until the last minute. Buffalo had no price competition in the East but it failed to induce any demand. Bran $44.50@45, standard midds. $46@46.50, red dog $54@54.50; the bulk differential on both bran and middlings was $4.50.

**New York:** Demand and supply fair; trend lower; bran $52.90@53.50; standard midds. $55.40@56.

**Philadelphia:** Demand dull; supply fair; bran $56, standard midds. $58, red dog $69.

**New Orleans:** Demand slow; trend easier; supply adequate; bran $49.50@50.25; shorts $51@51.75.

**Louisville:** Demand slow; trend weak; supply good; bran $49.50, mixed feed $50.75, shorts $52.50, middlings $54.50.

**Memphis:** Demand poor; trend steady; supply ample; wheat bran $44.50, gray shorts $45, standard midds. $45.

**Seattle:** Demand fair; trend steady; supply limited; $39, delivered common transit points, carlots.

**Portland:** Demand good; trend firm; supply ample; $39.

**Ogden:** Supply average; to Utah and Idaho: red bran and mill run $37, middlings $42; to Denver: red bran and mill run $44, middlings $49; to California: red bran and mill run $44.50, middlings $49.50, f.o.b. San Francisco and Los Angeles.

**Denver:** Demand good; trend weak; supply ample; bran $41, shorts $41.75, mill run $41.50.

**Los Angeles:** Standard mill run $48, steady demand, trend steady, supplies limited; red bran $54@55, slow demand, easier trend, ample supplies.

**San Francisco:** Demand fair; supply ample; millfeed $47.50, red bran $53.50.

### MINERAL FEED

**San Francisco:** Demand steady; supply good; all-purpose with iodine $70.

**Portland:** Demand good; supply ample; trend unchanged; $42.

**Ogden:** Supply average; $110 in 50-lb. blocks; $98, granular, 50-lb. bags.

**Wichita:** Demand good; supply adequate; all-purpose with iodine, 50-lb. blocks $95; 100-lb. bags $90, f.o.b. plant.

**Ft. Worth:** Demand fair; supply ample; all-purpose granules $89, block $94; mineral phosphorus 6% granules $105, block $110; cattle-sheep mineral 7% phosphorus granules $99, block $103; hog mineral phosphorus 3½% granules $88, phosphorus 2% $78 (all in 50-lb. paper bags).

**Sioux City:** 50-lb. mineral blocks 8.2% phosphorus $93; 7.5% phenothiazine sheep mineral blocks $4 each.

**Seattle:** Demand fair; trend steady; supply good; mixer mineral $48, ex-warehouse; all-purpose mineral $85, ex-warehouse.

**Denver:** Demand fair; trend unchanged; supply ample; 7.5% phenothiazine, 45-lb. block $4.50; 8.2% phosphorus, 50-lb. block $3.50; 7.5% phenothiazine, 8.2% phosphorus, 45-lb. block $5.25; 5% phosphorus, 50-lb. block $2.65.

### MOLASSES

**Louisville:** Demand slow; trend steady; supply ample; 14½¢ gal., tank car lots, f.o.b. Gulf ports.

**Cincinnati:** Demand fair; trend steady; supply adequate; 14½@15¢ gal., New Orleans.

**Ft. Worth:** Demand fair; supply sufficient; blackstrap 16¢ gal., f.o.b. Houston; delivered Ft. Worth truck $35.06, seller's market price on date of shipment.

**Kansas City:** Demand slow; trend steady; supply ample; 14¼@14½¢ gal., tank car, New Orleans.

**San Francisco:** Demand and supply good; $25, f.o.b. cars, Richmond, Cal.

**Buffalo:** Demand and supply good; trend steady; 18½¢ gal., f.o.b. Albany.

**St. Louis:** Demand slow; trend steady; supply ample; 14½¢ gal., New Orleans.

**Milwaukee:** Demand fair; supply good; blackstrap 14¢ gal., f.o.b. New Orleans.

**Boston:** Demand steady; supply plentiful; 18½¢ gal. in tank cars.

**Los Angeles:** Demand fair; trend steady; supply ample; $25 bulk, f.o.b. tank cars; $25.25 bulk, f.o.b. tank trucks.

**Atlanta:** Demand good; trend steady; supply limited; citrus $20, bulk, f.o.b. Florida producing points, immediate.

**Denver:** Demand fair; trend steady; supply ample; $46, tank car.

**Memphis:** Demand poor; trend lower; supply ample; blackstrap 14½¢ gal., tank car, f.o.b. New Orleans and $32.40 ton, delivered Memphis, truck.

**Seattle:** Demand fair; trend firmer; supply good; $25, f.o.b. Seattle, tank car lots or truck lots.

**New York:** Demand and supply good; trend steady; blackstrap 18¢ gal., tank cars, tank wagons, f.o.b. New York.

**Minneapolis:** Steady trend; good demand; adequate supply; 14¢ gal., f.o.b. New Orleans; $34.50 ton, f.o.b. terminal.

**New Orleans:** Demand slow; trend easier to firm; supply adequate; 15¢ gal. in tank cars or trucks; 600-lb. in customers' drums $9.62.

### NIACIN

**New York:** Trend steady; $8 kilo, 10-kilo lots; $8.20 kilo, 5- and 2½-kilo lots; $8.30 kilo, 1-kilo lots; freight prepaid or paid to destination.

### OAT PRODUCTS

**Philadelphia:** Demand slow; supply fair; pulverized white $53.50; Canadian oat feed $27.50, domestic oat feed $26.50.

**Louisville:** Demand fair; trend easy; supply normal; reground $22.50, rolled $88, feeding $31.50, crimped $70.50, pulverized $49.50.

**Cincinnati:** Demand fair; trend steady; supply adequate; reground oats $19.50; pulverized white $48.50@51.50; rolled oats $86.50@91.50.

**Ft. Worth:** Demand fair; supply sufficient; oat millfeed $44.95; reground oat millfeed 3% protein, sacked $32.95; 8% protein, bulk $28.

**Boston:** Demand and supply spotty; white pulverized $54; reground oat feed $25.

**Chicago:** Demand fair; supply adequate; reground oat feed $14.50@15; fine ground feeding oatmeal $71@72; feeding rolled oats $83@84.

**Portland:** Demand good; supply ample; trend higher; rolled $61, ground $58, cleaned $61.

**New Orleans:** Demand fair; trend firmer; supply ample; whole or ground oats $71@71.50; rolled oats $73@73.50.

**Minneapolis:** Steady trend; normal demand; ample supply; feeding rolled $82@84; pulverized $44; feeding oatmeal $70@71.50; crimped $60.50; reground $15.

**Seattle:** Demand fair; trend firmer; supply ample; whole oats $61, ground oats $61, rolled oats $63, all ex-warehouse, l.c.l., sacked.

**Los Angeles:** Demand fair; trend unchanged; supply adequate; pulverized, local production $61.

**Memphis:** Demand poor; trend steady; supply ample; 3½% protein, reground oat feed $20.50.

### OYSTER SHELL

**New Orleans:** Demand fair; trend steady; supply adequate; $15@16 local.

**Seattle:** Demand and trend steady; supply good; eastern $40, l.c.l., ex-warehouse.

**San Francisco:** Demand fair; supply ample; local $15, eastern $26.

**Boston:** Demand and supply steady; in paper $25.36.

**Portland:** Demand good; supply ample; trend unchanged; western $32, eastern $38, granite grits $26, shell flour $16.

**Louisville:** Demand good; trend steady; supply normal; in 80 lb. $23.17, 50 lb. $23.42, 25 lb. $25.67.

**Cincinnati:** Demand fair; trend steady; supply adequate; $21.75.

**Los Angeles:** Demand slow; trend unchanged; supply ample; $14.80.

### PEANUT OIL MEAL

**Milwaukee:** Demand and supply fair; 26% $36.50.

**Atlanta:** Demand fair; trend weak; supply limited; 45% $71, sacked, immediate.

### PEAT MOSS

**Seattle:** Demand and supply good; trend steady; $3.25 bale, delivered truck lots.

**New York:** Demand and supply good; trend steady; Canadian, 7 cu. ft. bale, veneer wrapped $3.32, freight prepaid; German, 7½ cu. ft. bale $3.97, at dock, New York.

**San Francisco:** Demand fair; supply ample; $3.75 bale.

**Chicago:** Demand heavy; supply moderate; $3.75@3.85, standard 7½ cu. ft. bale.

**Boston:** Demand and supply steady; $3.15 bale in carlots.

**Portland:** Demand good; supply ample; trend unchanged; $3.25 bale.

**Philadelphia:** Demand good; supply light; $2.95 bale, f.o.b. pier.

**Los Angeles:** Demand steady; trend unchanged; supply ample; Canadian 6.1 cu. ft. bale $3.85.

### POTASSIUM IODIDE, U.S.P.

**Cincinnati:** Demand good; trend steady; 90% KI in calcium stearate or carbonate mixtures, 250-lb. drums $1.81; 200-lb. in 100-lb. drums $1.83; 25-lb. drums $1.86, f.o.b. Cincinnati.

**New York:** Trend steady; granular or crystals $1.90 lb. in 250-lb. drums, $1.92 lb. in 100-lb. drums, $1.95 lb. in 25-lb. drums; 90% KI in calcium stearate or carbonate mixtures, $1.81 lb. in 250-lb. drums or 200-lb. lots, $1.83 lb. in 100-lb. drums, $1.86 lb. in 25-lb. drums; f.o.b. New York, New Jersey or Pennsylvania, freight allowed to destination on 100-lb. drums or larger packings.

### POULTRY BY-PRODUCTS

**Boston:** Demand good; supply improved; $96, f.o.b. eastern shipping points.

**Ft. Worth:** Demand good; supply very limited; 55% protein $97.50, f.o.b. north Texas plant.

**Atlanta:** Demand fair; trend steady; supply ample; $107 sacked, f.o.b. Alabama and Georgia producing points, immediate.

**Los Angeles:** Demand steady; trend firmer; supply limited; $2.05 a unit of protein.

**Salisbury, Md.:** Demand good; supply limited; trend steady; $99, f.o.b. producers' plants.

### RIBOFLAVIN

**Cincinnati:** Trend steady; feed grade (in feed supplements) 4¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

**New York:** Trend steady; feed grade (in feed supplements) 4¼¢ gm. in 3.36 to 16 gm./lb. mixtures, freight prepaid or paid to destination.

### RICE BY-PRODUCTS

**San Francisco:** Demand fair; supply ample; bran $45, polished $49.

**Ft. Worth:** Demand fair; very light offerings; carlots, rice bran $31.50@32, prompt shipment, f.o.b. south Texas rice mills; hulls $2, f.o.b. mills.

**Atlanta:** Demand fair; trend steady; supply limited; bran $47, sacked, immediate.

**Los Angeles:** Demand fair; trend unchanged; supply limited; bran, California production, high fat content $52.

### SCREENINGS

**Minneapolis:** Short supplies with demand about equal to supplies; lights $6@12, mediums $13@20, heavies $21@30; Canadian, bulk $14; Canadian ground $34; flaxseed screenings $30; oil type flaxseed screenings, 15% basis $36.

**Cincinnati:** Demand fair; trend steady; supply adequate; barley $28.60.

**Ft. Worth:** Demand poor; supply sufficient; 12% protein, ground $30, nominal.

**Chicago:** Demand fair; supply plentiful; ground grain screenings $26.50; Canadian, bulk $18.50.

**Buffalo:** Demand good; trend steady; supply fair; ground and sacked $29, New York, lake and rail; unground, bulk $21.75, New York.

### SOFT PHOSPHATE WITH COLLOIDAL CLAY

**Atlanta:** $20.40@20.67.
**Buffalo:** $25.31@25.45.
**Chicago:** $24.77@24.90.
**Cincinnati:** $23.47@23.60.
**Des Moines:** $25.23@25.35.
**Kansas City:** $24.55@25.
**Memphis:** $22.20@22.47.
**Minneapolis:** $25.92@26.06.
**Philadelphia:** $24.32@24.45.
**St. Louis:** $24.14@24.27.

### SORGHUMS

**Ft. Worth:** Demand fair; supply limited; carlots, bulk, No. 2 yellow milo $2.32@2.34, Texas common points.

**Los Angeles:** Demand steady; trend firmer; supply ample; milo $2.57½ cwt., bulk.

### SOYBEAN OIL MEAL

**Minneapolis:** Weaker trend; good demand; adequate supplies; $64.75.

**New Orleans:** Demand poor; trend steady to lower; supply ample; 44% $81.50@82.

**Seattle:** Demand steady; trend weaker; supply ample; $85, delivered, carlots.

**Louisville:** Demand slow; trend easy; supply ample; $68.93.

**Ogden:** Supply average; $81@86.

**Philadelphia:** Demand and supply fair; 44% $55.50, bulk, Decatur.

**Wichita:** Demand slow; supply ample; 44% $69, 50% $78, f.o.b. Wichita.

**Cincinnati:** Demand fair; trend lower; supply adequate; $56, bulk, Decatur.

**Ft. Worth:** Demand decreasing; supply sufficient; carlots 44% $78@80.50 depending on origin and tonnage, scattered May; $75.50@77, scattered June; truck delivery $71 May; $68, scattered June.

**San Francisco:** Demand fair; supply ample; $85.45.

**Kansas City:** Demand slow; trend steady; supply ample; meal for Kansas City and western shipment $50@51, bulk, Decatur; unrestricted meal $55@56 for spot shipment; $53@54 for late May.

**Decatur:** Demand fair; supply adequate; 44% bulk, unrestricted $55@55.50; 50% $64@64.50.

**Boston:** Demand fair; supply ample; 44% $59.50; 50% $65, both f.o.b. Decatur in bulk.


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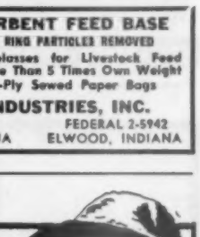

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**Milwaukee:** Demand fair; supply good; $53.50 bulk, Decatur.
**Omaha:** Demand slow; supply ample; $59.25, bulk, Omaha.
**Portland:** Demand slow; supply ample; trend lower; $53, f.o.b. Decatur.
**St. Louis:** Demand slow; trend lower; supply ample; $64.
**Chicago:** Anticipation of the new crop and slower buying on the part of feed manufacturers permitted declines of $2.50@3 ton in soybean oil meal during the week ending May 14. Some market observers believed that any move to increase inventories or a pick-up in feed business would bring a price revival, however; 44% soybean oil meal $64.50@65, 50% $74@74.50.
**Atlanta:** Demand fair; trend weak; supply ample; 44% $70.50, sacked, immediate.
**Memphis:** Demand dull; trend steady; supply light; prime 44% solvent $60.50, sacked, f.o.b. Memphis.
**Denver:** Demand slow; trend off sharply; supply ample; 44% $77.50, rail.
**Los Angeles:** Demand slow; trend weak; supply ample; $85.45.

**TANKAGE**

**Wichita:** Demand good; supply sufficient; 60% $112.50, f.o.b. plant.
**New Orleans:** Demand slow; trend steady to lower; supply sufficient; 60% $119.50@125.
**St. Paul:** Easy trend; slow demand; adequate supply; $105@111.
**Louisville:** Demand fair; trend steady; supply good; 60% $97.50@102.50.
**Cincinnati:** Demand fair; trend steady; supply ample; 60% digester $109, sacked, f.o.b. Cincinnati.
**Ft. Worth:** Demand very slow; supply sufficient; 60% digester $100@102, f.o.b. Ft. Worth.
**St. Louis:** Demand slow; trend lower; supply limited; $111.
**Omaha:** $110.
**Chicago:** Demand fair to slow; supply limited; 60% protein $107.50.
**Kansas City:** Demand fair to good; trend steady; supply tight; 60% digester $107.50@113, sacked.

**VITAMIN E FEED SUPPLEMENT**

**Rochester, N.Y.:** Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.
**New York:** Demand and supply good; trend steady; 100-lb. drums $1.70 lb., 25-lb. drums $1.75 lb., f.o.b. manufacturing plants, freight allowed and goods insured to destination.
**Cincinnati:** Demand good; trend steady; any quantity in 100-lb. drums $1.70; in 25-lb. drums $1.75; freight allowed to destination.

**WHEAT GERM MEAL**

**Buffalo:** Demand and supply fair; trend steady to lower; commercial grade $62, sacked, f.o.b. Buffalo.
**Chicago:** Weak trend; steady demand; ample supply; $69.
**New Orleans:** Demand fair; trend weaker; supply adequate; $72@74.

## PELLETS

(Continued from page 1)

talking, with not much action so far." However, he, like others, was quick to add that if the nutrition and economics of the thing work out as indicated in various experiments and commercial field trials, there is no doubt that there will be greatly increased use of pelleted roughage or, very likely, pelleted complete rations.

### Called the "New Look"

In an article on page 36 on "Pelleting Rations for Beef Cattle and Sheep," Prof. R. J. Webb of the University of Illinois says that "pelleted complete rations fed automatically are the new look in beef cattle and sheep feeding." As advantages of pelleting roughage or complete rations, he lists improved feed utilization, increased rate of gain, increased feed intake, complete control of the ration and (one of the most important advantages) easier handling in feeding operations.

In an article on page 94 on "A Complete Pelleted Ration for Self-Feeding Lambs," Purdue University researchers report on information which will be part of a presentation at the American Feed Manufacturers Assn. convention. They call this ration "one of the first real 'breakthroughs' in lamb feeding."

Many reports on other research on pelleted rations for ruminants also have appeared in Feedstuffs in recent weeks and months.

Representatives of pellet mill manufacturers this week provided further information and comments on ruminant ration pelleting developments. These men included J. L. Grahek, Sprout, Waldon & Co., Inc., Muncy, Pa.; A. C. Helm, Helm Mfg. Co., Ft. Worth, Texas; C. N. Hultberg, California Pellet Mill Co., Crawfordsville, Ind., and Oak Smith, Wenger Mixer Mfg. Co., Kansas City.

So far as the feed industry is concerned, it is noted that pelleting roughage, and particularly complete rations, lends itself primarily to pelleting in local mills using locally grown hay and grain. The economics of it rule out shipment of material over any considerable distances. A substantial portion of these rations probably will be custom mixed and pelleted.

However, as Mr. Smith noted, there also is an important place for larger feed manufacturers since their supplements can be used with the local feedstuffs in complete mixed and pelleted rations, thus possibly opening up a wider market for ruminant supplements.

### Field Pelleting

Some college engineers and farm equipment companies are working on field pelleting units that would go right into the field and pick up hay and pellet it. However, various limitations are pointed out, such as costs of the units, power requirements, weight of the equipment and possibly rough terrain.

Also, it would be difficult or impossible to devise practical field units that could combine concentrates into the ration in the same operation. And some persons feel that for feedlot operations, the tendency will be more toward complete rations, providing all required nutrients for fast gains in one feed handled mechanically.

If there are to be practical field pelleting units, they appear to be a good way off.

Another possibility is portable pelleting units going from farm to farm but not into the field. These would be operated by local feed men or groups of feeders.

Most opinion indicates that stationary equipment will be the principal thing.

As Mr. Hultberg pointed out, stationary operations using present equipment can be practical for many farms and feedlots.

However, more feed men are beginning to recognize the possible role for them, and at least a few now are pelleting roughage and complete rations on a custom or commercial basis. When supplements are used with the roughage, the feed industry appears to have a real opportunity. Some alfalfa dehydrators also have indicated interest in pelleting the ruminant rations, making greater use of their available equipment.

If more feed mills do get into this field, the operations might not be as simple as for feedlot operators producing pellets for their own use. For one thing, said Mr. Grahek, someone producing commercial pellets probably would have to make a generally better quality pellet, with requirements more critical, and the production rate might be lower than that obtained in some feedlot mills.

### An Old Practice

To some extent, the interest in pelleted roughage-concentrate rations represents new attention to an actually old development. Mr. Helm noted that some 40 years ago cottonseed oil mills were making a "whole press cake" containing the cottonseed hulls. Later the practice was to combine hulls and cottonseed meal into one feed, and the processors went to pelleting of the ration, including molasses. Some processors put up to nearly 50% of hulls into the feed, along with cottonseed meal and some grain.

Interest in this sort of thing dropped off, but now, as one man observed, "they're going back to putting in roughage." At any rate, in some cases there has been pelleting of roughage and concentrate combinations on a commercial basis for some time, and the people who do it view the new developments as an extension of what they have done previously.

While not many feed firms are now active in pelleting roughage or complete rations, there are reports of its spreading. For example, there are said to be mills that have or will have custom operations in Illinois, North Dakota, Indiana, Iowa, Nebraska and Kansas.

Many farmers interested in pelleting hay could more practically have it done by others, and they are being advised to encourage their feed men to get into roughage and complete ration pelleting.

Some roughages, using standard equipment, can be pelleted without steam, but the pellets "may go bad" if moisture is too high at the time of pelleting. Also, some experts say that steam may be responsible in some measure for improved results with pelleted hay rations.

Some hay-based rations are pelleted without steam when up to 10% of molasses is included.

However, it appears that most recommendations with equipment that normally uses steam are for use of the standard facilities, with steam boilers and coolers. Feed mills with such equipment then can use it in making other types of pellets, too.

It is pointed out that pellet production is decreased with increased roughage. Capacity will increase when the proportion of concentrate is increased.

Suggestions on the grind of hay to go into a pelleted ration vary somewhat, depending on the hay and the ration. However, there are recommendations that the hay generally be ground over a 3/16 or ¼" screen.

As for pellet size, in the Illinois research, 3/16" pellets were used. Some persons feel that a larger size is more desirable. Some now recommend a ⅜" pellet for most feeders. Others say that anything from 3/16 up to 1" might be used.

Regardless of questions on such things as pellet size, a good many animal scientists are now pointing to the improved results obtained with pelleted hay or complete rations.

For example, Mr. Smith mentioned one western cattle feeder getting regular gains of around 3.2 lb. per head per day, with room for still further improvement with a better ration. He also cited figures showing how feed intake has been increased by using the more dense pellets.

### Dairy Cattle

With dairy cattle, some scientists say that pelleted hay-based rations which have been tested have brought a decline in butterfat production.

This, it is said, may have been a result of a fine grind of the hay; butterfat output may hold up when a coarser grind is used. Further work is expected before pelleted complete rations for dairy cattle become more widely used.

In beef cattle feeding, pelleted rations of hay only may be all right for wintering, but it is suggested that complete rations will be the principal thing in most feeding operations, where growth and fattening and better carcass grades are required.

Some of the existing operations in pelleting roughage for beef cattle involve chopping and shredding alfalfa in pieces about 1-1½" long, dehydrating it and then pelleting the alfalfa. These pellets may be about ¾ or ⅞" in diameter. Knives are not used in the processing, but the pellets in handling break up into pieces from about ½ to 1½" long. These are said to be very satisfactory pellets.

One of the most important factors in pelleted feeds is ease of handling—bulk storage of one complete ration and mechanical handling of it to the animals, with greatly reduced labor. Self offloading equipment can be used to move pellets from the tank to self-feeders or feed bunks.

As Prof. Webb said, someone is going to provide this ration. Many farmers and feedlot operators will be looking into installation of their own processing facilities. However, many could more economically get their rations, and better rations, from their feed men.

Opinions on the future role of the feed man in this field vary, but some see a "tremendous" opportunity.

One observer put it this way: "Year in and year out feed manufacturers scrap with one another for every pound of poultry feed business, but in total they cannot create a lot more tonnage for poultry. There is an important area for development of tonnage in swine rations. But the most important area for tonnage development seems to lie in complete pelleted rations for ruminants.

"The biggest potential in the feed business is in the ruminant field. Now, these new complete pelleted feeds increase the opportunity greatly because of more profitable feeding results and because of a terrific reduction in manpower.

"Both larger manufacturers, supplying the concentrate or supplement, and local mills, doing a custom job, have a great opportunity if they follow through."

How far will it go? As with anything, it is the economics that finally determine what happens. Right now, it appears that the trend will be toward continually increasing use of complete pelleted rations for beef cattle and sheep.

## ALLIED MILLS

(Continued from page 1)

records are not entirely the result of the individual firm's efforts.

"Every feed manufacturer and dealer who is performing his function properly may take a share of credit for this achievement. Over the years the feed industry, by supplying quality feeds and service, has distinguished itself with the producers of meat, milk and eggs.

"Feeders recognize the important role of our industry in furnishing the nutrition for getting quality food products to consumers at a price which permits volume buying.

"It is our hope and belief," concludes Mr. Lenz, "that the feed industry, with all elements cooperating to give greater service, will use the current good year as a stepping stone to broader horizons. With the revival of agriculture this year, the trend toward consumer preference for protein foods, growing population and the long-term outlook for prosperity in this country, the opportunity for achievement is unlimited."

## Kansas Feed Dealers' Meetings Announced

HUTCHINSON, KANSAS—District meetings of the Kansas Grain & Feed Dealers Assn. have been announced by O. E. Case, executive secretary.

The schedule is:

May 19, Atchison, golf at the Bellevue Country Club during the day, social hour and dinner at The Hilltop, 5:30 p.m.

May 21, Iola, Kelley Hotel, meeting starts at 3 p.m. followed by social hour and dinner.

May 24, Beloit, Porter Hotel for cocktails followed by dinner at Municipal Building.

June 7, Colby, Cooper Hotel.

## Charles Winchell Heads Cincinnati Feed Club

CINCINNATI — Charles M. Winchell, Darling & Co., was elected chairman of the Cincinnati Feed Club at the recent annual dinner meeting at the Newport Yacht Club. He was unopposed.

Other new officers, all "Pellet Ticket" candidates, and all elected by one-vote margins, are Ray Fledderman, Archer-Daniels-Midland Co., co-chairman; Carl J. Nortmann, John F. Young Co., secretary-treasurer, and Parker Hitzfield, Early & Daniel Co., and Alex Steele, Kentucky Chemical Industries, Inc., directors. Fredric Emmert, F. L. Emmert Co., was campaign chairman for the successful ticket.

Charles Fedders, J. H. Fedders, Inc., program chairman, announced that the club's annual golf party and dinner will be held July 9 at the Summit Hills Country Club in nearby Kentucky.

## Arizona Plans First Ruminant Nutrition Conference May 22

PHOENIX—"Dark as the inside of a cow" was the old saying, but scientists will throw a light into that void at the first Arizona Ruminant Nutrition Conference, scheduled for May 22 by University of Arizona animal scientists at the university's Cotton Research Center near Phoenix.

Dr. Vearl Smith, head of the Arizona department of dairy science, will throw a flashlight beam into "Bossy" with his discussion of rumen function. More "light" into this living fermentation vat inside the cow will be shown in the movie, "The Rumen Story," which will be shown at the conference.

Some of the feed terms such as preformed protein, non-protein nitrogen and bacterial protein, will be discussed by Dr. A. R. Kemmerer, UA biochemist, who will tell how the rument uses protein.

The subject of feed additives in livestock rations also will be taken up in talks at the conference. Stilbestrol, Tapazole and other additives will be discussed, and research results reported, in two talks. Other speakers will discuss pelleted rations for cattle and sheep, as well as use of animal fats.

## KENT

(Continued from page 7)

completed feed is moved to the pelleting operation.

Kent officials noted that all feeds in the new plant are pelleted on two 100 h.p. mills into 5/32" pellets and then are dropped onto two horizontal coolers. They said that "caking, which may be found when meal or granular forms of feeds are not pelleted first, is almost entirely eliminated by this method of pelleting all feeds" and packaging is done on automatic high-speed equipment.

The bulk feed handling system developed at the Muscatine plant also is used at Sioux City. This system involves the use of one-ton steel storage boxes moved by forklift truck.

Kent officials said the new plant is a further step in the firm's expansion in the "Siouxland" area. The first warehouse facilities in the area were established in 1948; then larger warehouse and office facilities were completed in 1956. Continued expansion of business in the area, they said, made it necessary to build the new production facilities, which will serve nearly 100 dealer outlets in the territory.

Kent Feeds was started by G. A. Kent in 1927 in Indianola, Iowa. In 1936, the firm moved to Muscatine, and a new plant capable of producing 150,000 tons a year was built in 1952. This plant now serves parts of Iowa, Illinois and Wisconsin.

## SUPERIOR

(Continued from page 6)

yards in 1920. In 1929 the firm moved again to a new plant at its present location, 2100 South Robinson.

In 1955, as a culmination of nearly a half century of growth, ground was broken there for a new push-button mill which was completed about two years ago. Jones-Hettelsater Construction Co., Kansas City, designed and built the plant. It has a capacity of 60 tons an hour and is equipped with the latest facilities for storage, production and for both bulk and bag handling.

Kamil Eddie, a brother of the present head of the firm, was associated with Superior for a lifetime prior to death in 1950. Others with long service records are Robert W. Marshall, executive vice president; M. A. McNutt, vice president in charge of traffic; Thomas E. McGee, sales manager; Thomas W. Moody, advertising manager; R. C. Watkins, secretary, and Virgil Dean, plant superintendent.

The company has always worked very closely with colleges, particularly with Oklahoma State University and Texas A&M. These schools have in turn furnished the feed firm with a large percentage of its personnel, particularly in sales and service work. Many have degrees in livestock and poultry husbandry from these colleges. Mr. Eddie was the first chairman of the board of regents of Oklahoma State University, and has contributed continuously to scholarship funds at the colleges.

The firm's management also takes a keen interest in 4-H Club and FFA activities and assists in the support of such projects in this area.

## INTEGRATION

(Continued from page 7)

he mentioned earlier, a better quality more uniform, product at a lower price, and that production, and therefore price, are more stable throughout the year. A disadvantage to society was said to be that integration concentrates supply in the hands of fewer people.

Mr. McNeal attributed the rapid and extensive development of integration in the broiler industry to the fact that the plan came into being when broiler growing as an industry was relatively new. He pointed out that when various segments of the broiler industry operate independently there is much overlapping of effort, which integration eliminates.

Mr. McNeal said he felt that there would be a greater growth of arrangements among specialized groups, where specialists in related industries combine their skills, rather than concentration of all functions under a single ownership or segment.

In a question-answer session following his talk, Mr. McNeal was asked where the capital would come from to finance integrated programs as integration expands. He said the sources will be the same as they are now—feed and hatchery firms, processors, etc., but that lending agencies are now taking a greater interest in integrated farming, and in the future will be willing to take greater risks on livestock production than in the past.

Other questions involved how integration will affect feed companies generally, and whether producers will be as willing to produce as efficiently as they have in the past in independent operations. The Pillsbury executive said there will be an increase in the total amount of livestock and poultry produced, and in feed used. He also said that many feed and hatchery firms now include incentive clauses in their contracts to stimulate more efficient, quality production.

When asked if hog and egg production will move more to the eastern and western population centers, the economist replied that, although integration does tend this way, any extensive shift in production depends upon how alert present production centers are in cutting costs and bettering quality.

In commeting on whether integration will help small, less efficient farms survive, Mr. McNeal said these farms do need integration more than the large, efficient operations, but that he thought many big, independent farmers may go into integrated plans to gain the security—avoid marketing problems—such plans offer. He said he had already seen sound, independent operations become integrated for this reason.

The economist was asked if he thought profit margins in red meat production would follow a pattern similar to that of the broiler industry. He said it is inevitable that a producer who buys security must do so by giving up opportunities to realize high profit margins. He also mentioned that there is a greater tendency to integrate industries of short-life cycles such as broilers, than beef production, implying that integration of the beef industry will be slower in expanding.

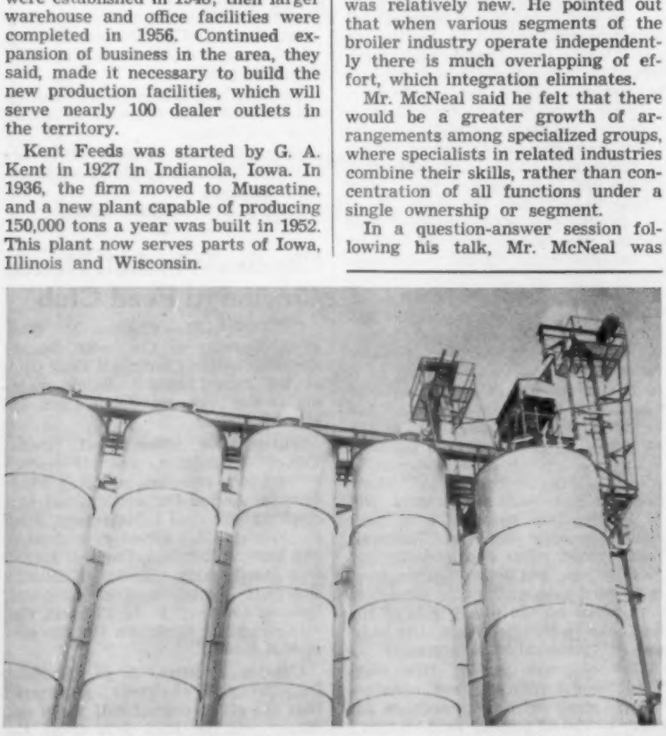
He explained that greater commercialization of the beef industry is certain in the future, through technological advances, if for no other reason.

Mr. McNeal stated that integration may be good from the over-all economic standpoint, but that his personal feeling is that it is bad from the sociological view in that it eliminates independent decision making, and eliminates the chance of higher profits for the independent operators willing to take risks on the basis of their own decisions.

However, he indicated, t h r o u g h greater efficiencies and less overlapping of functions, integration has tended to lower costs, as in the broiler industry. Although integration is not likely to expand so rapidly and so extensively in other phases of animal agriculture as it has in broilers, the tendency will be toward more integration to the extent that it cuts prices of quality products for consumers through greater efficiencies in production, processing and marketing.

The trend is toward larger, more specialized units, with larger production and lower margins, and integration tends to speed this trend.

Deterrents include existing efficient operations in some fields, farmer opinion and its effect on packers for example, and capital and management requirements. However, some packers and processors may tend to move toward more contract production.



**STORAGE TANKS—Thirteen bulk storage tanks hold a total of 800 tons of ingredients at the new Kent plant.**

### BUYS SOLE INTEREST

OSKALOOSA, IOWA—Jack Lamberson has purchased full interest in the Bell Feed Co. and will operate the business as the Lamberson Farm Center. He purchased the interest from Howard Bell.

## MARKETS

(Continued from page 2)

Pastures have been retarded a little by the cold spell but the setback was expected to improve the quality of the grass.

Broiler prices in the East at an average of 19@20¢ lb. were at levels where growers could make a profit.

Eggs held steady in the East. But in the Western New York area they were barely steady at 48@51¢ dz. for large whites, with receipts ample to a little above needs.

Ingredient prices generally drifted lower in a seasonal decline of values.

Millfeeds gave ground under lack of demand.

Running time of formula feed manufacturers averaged about 40 hours, with one mill at Buffalo up to 54½ hours to fill in the production gap caused by a fire at a plant in another city.

### Central States

Feed business remained good durthe week ending May 14, but there was some cutback from the fast pace set during the first four months of the year.

This can be expected, observers said, since new records each month could not be continued. April set high tonnage figures for some feed manufacturers. And, with pastures developing and dairy feed business taking a dip, it was natural that shipments should decline somewhat.

Cattle, hog and poultry feeds continued to move well, even though down slightly from the last several weeks. The outlook was for a continuation of at least fairly good tonnage for some time. Prices declined during the period, and this tends to slow sales.

### South Central

Very little change occurred in demand for formula feed. Mills reported that their business was holding at a quite satisfactory level and the lagging trend in evidence the past several weeks seemed to be leveling off.

Feed dealers were buying carefully, holding their inventories at a low level in view of the downward tendency of major ingredient prices. Mill price lists have shown several good declines lately but not enough to encourage a build up of dealer stocks. The sales of CCC non-storable corn at bin sites added to the current uncertainties.

Pig starters and growers built up to an excellent volume and deliveries were not as yet at their peak. After a slow start, chick starter sales were showing the usual seasonal increase with grower feeds coming into demand. Dairy feeds were moving at an unusually strong pace in view of the excellent pasturage available.

Mill running time ranged from one to two shifts, four and one half to five days a week.

### Southeast

Resistance to increased feed costs, steadily improving pastures and ample inventories of feed ingredients have slowed feed business. Poultry feed business still leads the field, especially with a 20¢ lb. f.o.b. farms broiler price which was reported to be steady. Baby chick placements were also strong.

While cattle and hog prices were reported to be relatively strong, improved pastures tended to slow demand for this type of mixed feeds. Roughage demand, which has been especially good most of this feeding season, slowed to almost a standstill, according to most reports. Price reductions on some of this material have taken place to try to stimulate additional demand.

While the price of citrus pulp was advanced $2.50 ton last week, a good

demand prevailed at the increased price, particularly from those buyers who failed to cover their requirements from sellers with storage facilities. Most processors reported that this week should see the end of this season's operations.

Based on circulating reports, the southernmost part of our section will receive considerable imported tonnage of various feed ingredients due to relatively high prices for domestic material. Reduced freight rates to the so-called Florida disaster territory came to an end May 12th, and business in this large feed consuming territory was expected to be relatively light for some weeks to come due to a large amount of feedstuffs being stored prior to expiration of the rate reduction.

Most of the trade seemed to feel that the usual summer lull in feed consumption has now set in and things were expected to be on the quiet side for some time to come. Weather continued to be mild though rain continued quite heavy in some areas, and planting of cotton and small grains was reported to be running several weeks late. Planting intentions in some states in our territory indicate a large increase in corn for the coming season.

## Pacific Northwest

Feed ingredient quotations held unchanged from the previous trading period except for a $3.50 ton decline in soybean listings. Soybean meal prices continued to carry an unsettled undertone in the face of only moderate buying by feeders and mixers.

Prices for other feedstuffs ruled steady with the supplies pretty well balancing the moderate demand. Portland and Seattle feed manufacturers reported that the sales volume continued good for formula feeds with broiler and turkey feeds taking the lead on a seasonal basis.

Oregon and Washington range feed development continues several weeks ahead of normal with the USDA Crop & Livestock Reporting Service indicating conditions in many areas are the best in 17 years. This factor had a tendency to further restrict dairy feed sales.

Only slight changes occurred in the formula feed price list with some high energy feeds reduced fractionally to compensate for soybean meal price declines. Fed steer and heifer prices held fully steady at North Portland where choice steers traded at $28.25@29.25 with good ones at $26.50 and $28.

Portland egg dealers had lower producer-paying prices on all grades and sizes by 2¢ doz. as a reflection of lower outside market values.

## Mountain States

There was not much change in the sales of formula feeds the past week. Turkey feeds continued to gain in volume as the birds gained size. Other poultry feeds showed very little change—a continuation of only fair volume.

There was good rainfall during the week with some warm sunshine that pushed the grass along very fast. There was expected to be an increasing amount of grass feeding cutting into formula feed sales.

Sales for the most part were running ahead of the same period a year ago, but competition seemed to be very keen in all phases.

Most ingredient prices remained steady through the week as purchasing was for near-by use in the majority of cases.

## Ohio Valley

Clearing weather at midweek and forecasts of warmer days ahead provided a cheering note after nearly a week of floods that found the Ohio River at its highest recorded level for this late in the year.

When the flood crested at 58 ft. on Tuesday, thousands of acres of farmlands were under water, but serious crop damage was reported at a minimum, largely because the prolonged cold weather in this area had seriously delayed spring planting.

Flood waters also interfered to some extent with feed deliveries to both retailers and users, but normal operations were expected to be resumed by this past weekend. When the flooded farmlands will become available for pasturage was anybody's guess. An offsetting favorable result was expected to be the considerable replenishment of the underground water table throughout the valley, with less likelihood of the summer drouth which had been predicted.

Another result of the flood situation has been lower receipts of cattle, hogs and sheep at area stockyards, and poultry and eggs at wholesale markets, with resultant quite sharp price advances for both animals and eggs.

## California

There was little change this past week in the pattern of formula feed sales or production. Pricewise, gains and losses held within narrow bounds.

However, once again soybean meal was very depressed and values fell $4.50 ton from the previous week. The urgent demand for animal proteins seemed to have eased somewhat, at least for the immediate future, and most mixers seemed to be very well covered on vegetable proteins with some having contracted through September on cottonseed meal.

New crop local production linseed meal for June-July takeout became available at $56 ton, which brought it much more in line with cottonseed.

Egg prices remained unchanged with a market demand that was moderate to slow. Prices on live poultry at the ranch closed at 21¢ to 23¢ or 1¢ lower.

The weather remained on the cool side with some scattered showers which proved to be beneficial to both pastures and new crop grains. Harvesting of barley got under way in some areas, but prospects remained unchanged for much activity prior to early June.

Buyers were hesitant to do much contracting insofar as mixers in the Los Angeles area were concerned. However, it was reported that feeders in both the Imperial and San Joaquin Valleys felt prices were attractive enough for them to cover at least part of their seasonal requirements.

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